INDUSTRIAL AND COMMERCIAL ENERGY TAX CREDITS

HEARING
BEFORE THE
SUBCOMMITTEE ON TAXATION AND DEBT MANAGEMENT
AND
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
OF THE
COMMITTEE ON FINANCE
UNITED STATES SENATE
NINETY-SEVENTH CONGRESS
FIRST SESSION
ON
S. 750 and S. 1288

OCTOBER 19, 1981

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INDUSTRIAL AND COMMERCIAL ENERGY TAX CREDITS

MONDAY, OCTOBER 19, 1981

U.S. SENATE,
COMMITTEE ON FINANCE,
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:07 a.m., in room 2221, Dirksen Senate Office Building, Hon. Malcolm Wallop (chairman of the subcommittee) presiding.

Present: Senators Wallop, Durenberger, and Grassley.

[The committees press releases announcing this hearing, the bills S. 750 and S. 1288, The Joint Tax Committee's description, and the prepared statements of Senators Wallop and Dole follow:]

Press Release No. 81-164

PRESS RELEASE

FOR IMMEDIATE RELEASE
September 25, 1981

COMMITTEE ON FINANCE
UNITED STATES SENATE
Subcommittee on Energy
and Agricultural Taxation
2227 Dirksen Senate
Office Building

FINANCE SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION SETS HEARING ON INDUSTRIAL AND COMMERCIAL ENERGY TAX CREDITS

Senator Malcolm Wallop, Chairman of the Subcommittee on Energy and Agricultural Taxation of the Senate Committee on Finance announced today that the Subcommittee will hold a hearing on industrial and commercial energy tax credits on Monday, October 19, 1981.

The hearing will begin at 9:30 a.m. on October 19, 1981, in Room 2221 of the Dirksen Senate Office Building.

Senator Wallop stated, "Energy conservation remains one of the most economic, safest and most environmentally sound methods of reducing our dependence on foreign energy sources. For this reason I have long backed carefully targeted tax incentives to encourage energy conservation. Despite the Federal Government's need for additional revenue, I reject the notion that we should abandon our efforts to continue to encourage energy conservation through an extension and better targeting of the existing business energy tax credits. I hope this hearing will provide some constructive dialogue on the future direction of the energy tax incentives."

The bills that will be considered at the hearing are:

S. 750 (Senator Wallop, et al) - The Industrial Energy Security Tax Incentives Act of 1981; and

S. 1288 (Senator Durenberger) - Commercial Business Energy Tax Credit Act of 1981.

Requests to Testify.--Witnesses who desire to testify at the hearing on October 19, 1981 must submit a written request to Robert E. Lighthizer, Chief Counsel, Committee on Finance, Room 2227, Dirksen Senate Office Building, Washington, D.C. 20510, to be received no later than noon on Monday, October 12, 1981. Witnesses will be notified as soon as practicable thereafter whether it has been possible to schedule them to present oral testimony. If for some reason a witness is unable to appear at the time scheduled, he may file a written statement for the record in lieu of the personal appearance. In such case a witness should notify the Committee on his inability to appear as soon as possible.

Consolidated Testimony.--Senator Wallop urges all witnesses who have a common position or who have the same general interest to consolidate their testimony and designate a single spokesman to present their common viewpoint orally to the Subcommittee. This procedure will enable the Subcommittee to receive a wider expression of views than it might otherwise obtain. Senator Wallop urges very strongly that all witnesses exert a maximum effort to consolidate and coordinate their statements.

Legislative Reorganization Act.--Senator Wallop stated that the Legislative Reorganization Act of 1946, as amended, requires all witnesses appearing before the Committees of Congress "to file in advance written statements of their proposed testimony, and to limit their oral presentations to brief summaries of their argument."

Witnesses scheduled to testify should comply with the following rules:

(1) A copy of the statement must be filed not later than noon on the last business day before the witness is scheduled to appear.

(2) All witnesses must include with their written statement a summary of the principal points included in the statement.

(3) The written statements must be typed on letter-size paper (not legal size) and at least 100 copies must be submitted by noon on Friday, October 16, 1981.

(4) Witnesses should not read their written statements to the Subcommittee, but ought instead to confine their oral presentation to a summary of the points included in the statement.

(5) Not more than five minutes will be allowed for the oral summary.

Written Statements.--Witnesses who are not scheduled to make oral presentations, and others who desire to present their views to the Subcommittee, are urged to prepare a written statement for submission and inclusion in the printed record of the hearings. These written statements should be typewritten, not more than 25 double-spaced pages in length, and mailed with five (5) copies to Robert E. Lighthizer, Chief Counsel, Committee on Finance, Room 2227, Dirksen Senate Office Building, Washington, D.C. 20510, not later than Monday, November 2, 1981.

P.R. # 81-164

Press Release No. 81-164
(Revised)

PRESS RELEASE

FOR IMMEDIATE RELEASE
October 13, 1981

COMMITTEE ON FINANCE
UNITED STATES SENATE
Subcommittee on Energy and
and Agricultural Taxation
2227 Dirksen Senate Office
Building

FINANCE SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION RESCHEDULES HEARING ON INDUSTRIAL AND COMMERCIAL ENERGY TAX CREDITS

Senator Malcolm Wallop, Chairman of the Subcommittee on Energy and Agricultural Taxation of the Senate Committee on Finance, announced today that the Subcommittee's hearing scheduled for Monday, October 19, 1981 will begin at 9:00 a.m. in Room 2221 of the Dirksen Senate Office Building, not 9:30 a.m. as originally announced.

P.R.#81-164
(Revised)

DESCRIPTION OF
ENERGY TAX CREDIT BILLS
(S. 750 and S. 1288)

SCHEDULED FOR A HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION

OF THE

COMMITTEE ON FINANCE

ON OCTOBER 19, 1981

PREPARED FOR THE USE OF THE

COMMITTEE ON FINANCE

INTRODUCTION

The bills described in this pamphlet have been scheduled for a public hearing on October 19, 1981, by the Subcommittee on Energy and Agricultural Taxation of the Senate Finance Committee.

There are two bills scheduled for the hearing: S. 750 (relating to tax credits for investments in energy efficiency and fuel conservation projects) and S. 1288 (relating to energy tax credits for certain investments by commercial businesses).

The first part of this pamphlet contains a summary of the bills. This part is followed by a more detailed description of each bill, including present law, issues, an explanation of the provisions of each bill, their effective dates, and estimated revenue effects.

I. SUMMARY

Present Law

In addition to the generally applicable 10-percent investment tax credit, a 10-percent nonrefundable tax credit is provided for investments in alternative energy property (sec. 48(l)(3)), specially defined energy property (sec. 48(l)(5)), recycling equipment (sec. 48(l)(6)), and cogeneration equipment (sec. 48(l)(14)). Each item in these categories is specifically defined and none includes either a general provision permitting a credit based on energy savings or a provision allowing a credit for investments with respect to office buildings or retail stores.

S. 750—Senator Wallop, et al

The bill would expand availability for the energy tax credits for investments in alternative energy property, specially defined energy property, recycling equipment, and cogeneration equipment, increase these credits from 10 percent to 20 percent, and extend these credits through 1986. The bill also would provide a new credit for certain energy efficiency and fuel conservation expenditures based on the amount of energy saved by the investment.

S. 1288—Senator Durenberger, et al

The bill would modify the definition of specially defined energy property to include eleven new energy saving devices, increase the level of the credit from 10 to 20 percent, and extend the credit through 1986. Eligibility would be extended from items installed in connection with industrial or commercial processes to property installed in connection with any existing industrial, retail or commercial process, activity, facility, building or equipment. The bill also would provide a 20-percent energy credit for insulation installed in or on an existing industrial, retail, or commercial building.

II. DESCRIPTION OF BILLS

1. S. 750—Senators Wallop, Baucus, Boren, Chafee, Long, et al.

Energy Credit for Energy Efficiency and Fuel Conservation Projects

Present Law

In addition to the regular investment tax credit and cost recovery allowances, present law provides a nonrefundable energy tax credit for investments in certain business energy property. The amount of the credit generally is 10 percent of the taxpayer's cost of acquiring or constructing eligible property. The credits generally expire after December 31, 1982; however, the expiration date is extended through 1990 for taxpayers with projects that require substantial planning and construction if certain affirmative commitments have been made in a timely fashion.

Eligible property includes alternative energy property, which includes boilers and burners fueled by an alternate substance (i.e., other than oil, natural gas, or one of their products), equipment that uses an alternate substance to make a synthetic liquid, gaseous, or solid fuel, certain coal conversion equipment, and related handling and pollution control equipment.

Specially defined energy property also qualifies for the energy tax credit. Items specified as specially defined energy property include recuperators, heat wheels, heat exchangers, and automatic energy control systems. To be eligible, the principal purpose of the equipment must be to reduce the amount of energy consumed in an existing commercial or industrial process. Under Treasury regulations, a commercial or industrial process is defined as a method of producing a desired result by chemical, physical or mechanical action (Treas. Reg. § 1.46–9(f)). In addition to the specified items, the Secretary may add additional items of qualifying property if certain standards are satisfied. That authority has not yet been exercised.

Recycling equipment, cogeneration equipment, solar or wind energy property, hydroelectric equipment, shale oil equipment, biomass property, qualified intercity buses, and equipment for producing natural gas from geopressured brine are also eligible for the energy investment tax credit.

Issues

The following issues arise in connection with the bill:

1. Should the amount of the business energy credit be increased to 20 percent for certain types of energy property?

2. Should the expiration date of the credit for certain types of energy property be extended from December 31, 1982, to December 31, 1986?

3. Should a new 20-percent energy credit apply to property used to reduce the total amount of natural gas or oil consumed by a facility, or equipment per unit of output?

4. Should the definitions of specially defined energy property, alternative energy property, alternate substances, recycling equipment, solid waste, as cogeneration equipment, be modified to extend the business energy credit to additional types of property?

5. Should the rule excluding public property from the definition of certain types of energy property apply if the property is installed in connection with a small power production facility or a qualifying cogeneration facility?

6. Should alternative energy property, recycling equipment, qualified hydroelectric generating property, and cogeneration equipment qualify without regard to present law requirements limiting the credit to the incremental cost of reducing energy rather than increasing operating capacity?

7. Should certain property associated with eligible energy property be added as an additional item of qualifying property?

Explanation of the Bill

In general, the bill would increase the energy investment credit to 20 percent for alternative energy property (except geothermal and ocean thermal property), specially defined energy property, and recycling equipment, and extend the expiration date of the credit for this property to December 31, 1986. The bill would create a new category of energy property—qualified industrial energy efficiency property (QIEEP)—that would be eligible for a 20-percent energy investment credit. In addition, the bill would amend the definition of certain types of energy property eligible for the energy credit.

Qualified industrial energy efficiency property (QIEEP)

QIEEP must be an integral part of a modification to, or replacement of, all or part of an existing manufacturing, production, or extraction facility, commercial or industrial process, or item of equipment. The modification or replacement must not increase the total amount of natural gas or oil (other than waste gases and petroleum coke or pitch) consumed by the facility, process, or equipment per unit of output. The property must result in the use of less energy per unit of output by the facility, process, or equipment. Also, the modification must result in a reduction of energy consumed by the process, facility, or equipment of at least 1,000 barrels of oil a year (or the equivalent).

The credit would be reduced if the cost of the energy savings were excessive or the energy savings warranted investment without regard to the credit. If the energy saving were less than $10 per barrel of oil equivalent (BOE), the 20-percent credit would be reduced by 2 percentage points for each dollar of BOE cost less than $10. If the energy saving were more than $60 per BOE, the credit would be $60 multiplied by the amount of saving. From $10 through $60 BOE, the full 20-percent energy investment credit would apply.

Qualified property must be new tangible property for which depreciation is allowable, have a useful life of 3 or more years, and be directly related and utilized for energy reduction or conversion. Public utility property would not be eligible. Qualified property must be installed on or in connection with an existing facility. For the QIEEP credit, a facility is existing if industrial or commercial operations were conducted at the site as of January 1, 1981.

No property is eligible for the QIEEP credit if (1) the property is otherwise energy property eligible for an energy investment credit, (2) the replaced property is not retired (except for standby use), or (3) the replacement is not on the same or an adjacent site.

The rules governing eligibility for the regular investment credit would apply with a few modifications. For example, as with other energy credits the exclusion of a building and its structural components would be disregarded. Boilers fueled by oil or gas would be eligible for QIEEP notwithstanding their ineligibility for the regular credit. There would be no partial credits; all qualified property with a useful life of 3 or more years would receive the full 20-percent QIEEP credit. The credit could be applied against 100 percent of tax liability.

The manner in which the QIEEP credit would operate may be demonstrated by the following example. Assume a taxpayer made $1,000,000 of qualified expenditures to modernize and improve the efficiency of an existing industrial process and that none of the investments were eligible for other energy credits. The tentative QIEEP credit would be $200,000 (20% × $1,000,000). To determine the credit actually allowable, the taxpayer would have to determine the amount of energy saved (assuming no change in output) and any change in output. If the investment saved 10,000 barrels of oil (or the equivalent thereof) (i.e., 10,000 BOE's), then the full 20-percent of credit would be available since the credit for each BOE saved is between $10 and $60. (That is 20% credit × $1,000,000 ÷ 10,000 BOE saved=$20 of credit per BOE). If the investment saved only 2,000 BOE, then the credit would be reduced from $200,000 to $120,000 as follows: 20% credit × $1,000,000 ÷ 2,000 BOE=$100 credit per BOE; therefore, the alternative credit amount is computed as $6 × 2,000 BOE's saved= $120,000. If the investment saved 40,000 BOE's the credit would be reduced from $200,000 to $100,000 as follows: 20% credit × $1,000,000 ÷ 40,000 BOE=$5 credit per BOE; therefore, the reduced credit amount which is $5/$10 × 20% × $1,000,000=$100,000 applies.

If the output is increased by more than 10 percent, then the credit calculated as above is reduced in proportion to the increase in capacity.

Amendments to energy property definitions

Alternative energy property.—The bill also would amend the definition of alternative energy property to include equipment for converting alternate substances into electricity, heat treating furnaces, melt furnaces, and certain modification equipment. In addition, the bill would amend the definition of alternate substance to include petroleum coke, petroleum pitch, synthetic fuels, and any other product produced from an alternate substance. The Act would also amend the requirements for determining whether an alternate substance comprises the primary fuel for purposes of qualifying as alternative energy property.

Specially defined energy property.—With respect to specially defined energy property, the bill would specify six additional items of qualifying property: including (1) industrial insulation, (2) industrial heat pumps, (3) modifications to burners, combustion systems or process furnaces, (4) batch operation conversion equipment, (5) product separation and dewatering equipment, and (6) fluid bed dryers and calciners. Also, the bill would permit property to qualify as specially defined energy property even though used in reducing energy consumed in an industrial or commercial activity rather than in an industrial or commercial process. Thus, specially defined energy property installed in retail stores and in office buildings would qualify for the credit. Under the bill, any items added by the Secretary in the future would be treated as qualified energy property as of October 1, 1978.

Recycling equipment.—The bill would amend the definition of recycling equipment to include property for unloading, transfer, storage, and reclaiming from storage of solid waste. The bill would also add as eligible property certain fuel processing equipment and equipment to recover and store other reusable resources and materials without regard to the rule under present law excluding equipment used in a process after the first marketable product is produced. The definition of solid waste would be amended to include semi-solid and liquid materials, including materials resulting from industrial, commercial, agricultural, or community activities.

Cogeneration equipment.—The bill would substantially amend the definition of cogeneration equipment. Under the bill, cogeneration equipment would be expanded to include property used as part of a system for the sequential generation of mechanical power, as well as electric power, in combination with qualified energy. The bill would repeal the present law limitations on the use of oil or gas and permit equipment to qualify without regard to the present law rule limiting the credit to incremental capacity.

Biomass property.—With respect to the definition of biomass property, the bill would amend the definition of alternate substance to exclude source separated, separately, collected, recyclable waste paper.

Associated property.—The bill would add a new category of energy property referred to as "associated property". For alternative energy property, associated property would mean property to enable utilization of an alternate substance. For specially defined energy property, associated property would mean property reasonably necessary to reduce energy consumed or heat wasted by the process or activity. For recycling equipment, associated property would mean property reasonably necessary to achieve the sorting, preparation, or recycling of solid waste. For cogeneration equipment, associated property would mean property reasonably necessary to achieve the intended energy savings. For QIEEP, associated property would mean property reasonably necessary to reduce energy per unit of output. The energy percentage for the energy property it was installed in connection with.

Public utility property.—The bill would amend the present law provision excluding public utility property from the definition of certain types of energy property. Under the bill, public utility property would not be eligible for the energy credit for QIEEP. The bill also would add an exception to the general rule excluding public utility property from the energy credit for property installed in connection with a qualifying small power production facility or a qualifying cogeneration facility (within the meaning of the Federal Power Act).

"Existing" facilities.—Under present law, certain equipment qualifies only if it is installed in connection with an existing process or facility. A facility is "existing" under present law if 50 percent or more of the basis for the facility is attributable to construction before October 1, 1978. Under the bill, a facility would be considered "existing" if industrial or commercial operations were conducted at that geographic location as of October 1, 1978. Contrary to present law, a process carried on in an existing facility on October 1, 1978, would not cease to be treated as such solely because substantial capital expenditures are made to modify that process after October 1, 1978.

Replacement property.—The bill would limit the availability of the credit for replacement property. Under the bill no replacement equipment would qualify as energy property if the replaced property is not retired from service (except for property retained as standby or temporary replacement property during periods the new property is inoperable because of an emergency or repair) or the replacement property is placed in service at a different site.

Incremental costs.—Under Treasury Regulations, only the incremental cost of reducing energy (rather than increasing operating capacity) generally is eligible for the credit. The bill would delete this incremental cost limitation for alternative energy property, recycling equipment, qualified hydroelectric generating property, and cogeneration equipment, and clarify the existing rules for determining incremental costs for other property.

Effective Date

In general, the bill would apply to taxable years ending after December 31, 1980.

The amendments with respect to QIEEP would apply for property acquired by the taxpayer and placed in service after December 31, 1980 but before January 1, 1987, and property constructed by the taxpayer to the extent of construction expenditures made after 1980 and before 1987.

For QIEEP to which the affirmative commitment rule under the 1980 Act would apply, the credit would apply to property placed in service before January 1, 1995.

Revenue Effect

Difficulty in defining and measuring the mix of inputs and outputs, and energy saved per unit of output, and in identifying the related investment which achieved the energy savings all contribute to uncertainty in estimating the revenue impact of this bill. However, preliminary estimates by the Treasury Department indicate that this bill would reduce fiscal year budget receipts by approximately $2.5 billion in 1982 increasing to approximately $5 billion in 1986.

2. S. 1288—Senators Durenberger, Symms, et al.

Commercial Business Energy Tax Credit Act of 1981

Present Law

In addition to the regular investment tax credit and cost recovery allowances, present law provides an energy investment tax credit for investments in specially defined energy property. The specific items enumberated in section 48(l)(5) as specially defined energy property are (1) recuperators, (2) heat wheels, (3) regenerators, (4) heat exchangers, (5) waste heat boilers, (6) heat pipes, (7) automatic energy control systems, (8) turbulators, (9) preheaters, (10) combustible gas recovery systems, (11) economizers, and (12) modifications to alumina electrolytic cells. In addition, the Secretary may specify other property as eligible for the credit, if the item is similar to any of the listed items and if production and use of the item will result in a net reduction in consumption of oil or natural gas. Other factors that the Secretary must take into account in making a decision whether to add an item to the list of specially defined energy property include other federal programs that would accomplish the same objective, the effects on the environment of making and using the property, public health or safety, estimates of increased use as a result of the specification, estimates of whether sufficient production capacity exists to satisfy increased demands resulting from specification of an item as eligible for the credit, the useful life of the item, and the amount of oil and natural gas used directly or indirectly in the manufacture of such item and other items necessary for its use.

Each item, whether specifically listed in the Code or added by the Secretary, must have the principal purpose of reducing the amount of energy consumed in an existing (as of October 1, 1978) industrial or commercial process and must be installed in connection with an existing industrial or commercial facility. Treasury regulations interpret the phrase "industrial or commercial process" as requiring an activity in which a desired change is accomplished by chemical, physical or mechanical means. (Treas. Reg. § 1.48–9(f).) Thus, laundering and food preparation are commercial processes; however, retail sales, general office activities and leasing of residential space are not processes. For example, an automatic energy control system designed to reduce energy consumption in heating or cooling an office building *is not* specially defined energy property under the Treasury regulations but an automatic energy control system that reduces energy consumed in a manufacturing process *is* specially defined energy property.

Present law does not provide any energy tax credit for investments in insulation installed in or on non-residential property.

Issues

Five issues arise in connection with the bill. The first is whether the interpretation of "industrial or commercial process" contained in the Treasury's regulations should be expanded. The second is whether additional items should be added to the list of specially defined energy property. The third is whether the energy credit for specially defined energy property should be increased from 10 to 20 percent. The fourth is whether it should be extended beyond 1982. The fifth is whether a 20-percent tax credit should be provided for insulation installed in or on an existing industrial, retail or commercial building or facility.

Explanation of the Bill

The bill would make five changes in the business energy tax credit provisions. First, eleven new items would be added to the list of specially defined energy property. Secondly, the credit would apply to any listed property installed to reduce energy consumption in any existing industrial, retail, or commercial process, activity, facility, building or equipment rather than only property installed in connection with an industrial or commercial process. Thirdly, the credit for specially defined energy property would be increased from 10 percent to 20 percent; and fourthly, the credit would be extended through 1986. Finally, a 20-percent energy tax credit would apply to "installation property."

Treasury regulation regarding "industrial or commercial process"

The first modification to the credit for specially defined energy property reverses the Treasury regulation that limits the meaning of "industrial or commercial process" to "a method of producing a desired result by chemical, physical, or mechanical action." Under the new rule, specified property that lowers energy consumption in any existing industrial, retail or commercial process, activity, facility, building or equipment would be eligible for the credit. Thus, investments with respect to retail stores or office buildings could qualify. The bill retains the present law definition of "existing." Thus, only investments in connection with a process, activity, facility, building, or piece of equipment in existence as of October 1, 1978, could qualify. The bill does not extend the specially defined energy property credit to property installed in connection with residential rental property. Energy investments in residential property would continue to be dealt with exclusively through the residential energy credit provisions of section 44C.

Eligible items

The second modification would add eleven new items to the list of specially defined energy property. These additions would be:

(1) an energy management or control system or device;

(2) a heat pump apparatus, cooling tower, condenser or evaporator which modifies or replaces existing components in heating, ventilating, air-conditioning or refrigeration system;

(3) an energy redistribution system, device or component for heating or cooling, including a duct, pipe, vent, pump or fan which exchanges the air, gas or fluids within or between rooms to increase or decrease temperature or humidity;

(4) a furnace or boiler replacement burner designed to achieve a reduction in the amount of fuel consumed as a result of increased combustion efficiency;

(5) a device or control package retrofitted to an electric motor to improve its efficiency;

(6) a mechanical or programmable timer or motion detector to turn on or off energy using equipment;

(7) a meter or submeter which displays or records the cost or quantity of energy usage;

(8) a replacement, modification or conversion of lighting system;

(9) a device which modifies refrigeration equipment;

(10) an energy storage system, including a heat sink; and

(11) equipment used in the preparation, storage, cooking, display, or serving of food or cleaning of dishware which incorporates design features specifically engineered to reduce energy consumption, and which replaces similar equipment of the taxpayer purchased before January 1, 1976.

The effect of these additions to the list of specially defined energy property would be to extend the energy credit to most energy saving modifications of a building or plant's heating, cooling or lighting systems and to modifications of refrigeration and food preparation systems.

Increase in and extension of credit

The bill also would increase the credit for specially defined energy property from 10 percent to 20 percent for property installed after 1980 and would extend the credit through 1986.

Credit for insulation property

The final amendment in the bill would add a 20-percent credit for "insulation property" to list of business energy tax credits. The credit would apply to insulation property installed in or on an existing industrial, retail, or commercial building or facility after December 31, 1980 and before January 1, 1987, to reduce the heat loss or gain of the building or facility. The requirement that insulation reduce the heat loss or gain of a building or facility would limit the credit to installation that would result in a net energy savings through net reductions in heating and cooling costs. The present law definition of an existing facility would be retained. Therefore, only insulation added to buildings or facilities in existence on October 1, 1978, would be eligible for the credit. As with the other business energy credits, the insulation credit would not apply to improvements to residential real estate.

Insulation property would be defined to include:

(1) insulation materials installed as part of the building envelope including the wall, ceiling, floor, and roof,

(2) insulation materials installed in connection with mechanical system equipment, ducts and piping,

(3) heat reflecting and heat absorbing window and door materials and reflective and heat absorbing window and door films and coatings,

(4) storm or thermal windows or doors for the exterior of a building,

(5) thermal curtains which separate areas of different temperatures,

(6) vestibules,

(7) exterior skylights which have one or more sheets of glazing or other type of panel, and

(8) caulking or weatherstripping of an exterior door, window, or skylight.

Effective Date

The provisions of the bill would apply to taxable years beginning after December 31, 1980. Thus, the new credits and increased rates generally would be available for property placed in service after December 31, 1980; however, transition rules similar to those in section 48(m) would apply to property under construction on January 1, 1981. The credits for specially defined energy property and insulation property would expire on December 31, 1986.

Revenue Effect

The revenue estimate is not yet available.

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II

97TH CONGRESS
1ST SESSION

S. 750

To amend the Internal Revenue Code of 1954 to provide nonrefundable tax credits for investments in qualified industrial energy efficiency and fuel conversion projects, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MARCH 19 (legislative day, FEBRUARY 16), 1981

Mr. WALLOP (for himself, Mr. BOREN, Mr. KENNEDY, Mr. PERCY, Mr. LONG, Mr. CHAFEE, Mr. BAUCUS, Mr. TOWER, Mr. PELL, Mr. D'AMATO, and Mr. COCHRAN) introduced the following bill; which was read twice and referred to the Committee on Finance

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A BILL

To amend the Internal Revenue Code of 1954 to provide nonrefundable tax credits for investments in qualified industrial energy efficiency and fuel conversion projects, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; AMENDMENT OF 1954 CODE.

(a) SHORT TITLE.—This Act may be cited as the "Industrial Energy Security Tax Incentives Act of 1981".

(b) AMENDMENT OF 1954 CODE.—Except as otherwise expressly provided, whenever in this Act an amendment is expressed in terms of an amendment to a section or other provision, such reference shall be considered to be made to a section or other provision of the Internal Revenue Code of 1954.

SEC. 2. INCREASE IN ENERGY PERCENTAGE FOR CERTAIN ENERGY PROPERTY AND SPECIFICATION OF ENERGY PERCENTAGE FOR QUALIFIED INDUSTRIAL ENERGY EFFICIENCY PROPERTY.

(a) IN GENERAL.—The table contained in clause (i) of section 46(a)(2)(C) is amended by adding at the end thereof the following new subclauses:

"VII. CERTAIN ALTERNATIVE ENERGY PROPERTY, SPECIALLY DEFINED ENERGY PROPERTY, RECYCLING EQUIPMENT, AND COGENERATION EQUIPMENT.—Property described in section 48(l)(3) (Other than clause (viii) or (ix) of subparagraph (A) thereof), section 48(l)(5), section 48(l)(6) or section 48(l)(14).	20 percent	January 1, 1981	December 31, 1986.
"VIII. QUALIFIED INDUSTRIAL ENERGY EFFICIENCY PROPERTY.—Property described in section 48(q).	20 percent	January 1, 1981	December 31, 1986".

(b) AFFIRMATIVE COMMITMENTS.—Section 46(a)(2)(C) is amended by adding at the end thereof the following new subclause:

"(v) LONGER PERIOD FOR CERTAIN ENERGY PROPERTY.—Clause (iii) shall apply to energy property described in subclauses VII or VIII of clause (i). However, in applying clause (iii) to such property, 'December 31, 1986' shall be substituted for 'December 31, 1982', 'December 31, 1994' shall be substituted for 'December 31, 1990', 'January 1, 1987' shall be substituted for 'January 1, 1983', and 'January 1, 1990' shall be substituted for 'January 1, 1986'.".

SEC. 3. QUALIFIED INDUSTRIAL ENERGY EFFICIENCY PROPERTY TREATED AS ENERGY PROPERTY.

(a) Qualified Industrial Energy Efficiency Property Defined.—Section 48 (relating to definitions; special rules) is amended by redesignating subsection (q) as subsection (r) and by inserting after subsection (p) the following new subsection:

"(q) Qualified Industrial Energy Efficiency Property.—

"(1) In general.—For purposes of this subpart, the term 'qualified industrial energy efficiency property' means property used as a part of a modification to an existing industrial or commercial facility (including the modification or replacement of one or more processes carried on at such facility on January 1, 1981), but only if such modification—

"(A) results in the utilization by such facility, process or processes of less energy per unit of output,

"(B) results in an aggregate annual decrease in energy consumed by such facility, process or processes, based upon levels of output in effect before such modification, of not less than 1,000 barrels of oil equivalent, and

"(C) does not increase the total amount of oil and natural gas (or products thereof other than petroleum coke, petroleum pitch and waste gases) consumed by such facility, process or processes per unit of output.

"(2) LIMITATION.—Property shall be considered as qualified industrial energy efficiency property only if it is property—

"(A)(i) the construction, reconstruction or erection of which is completed by the taxpayer after January 1, 1981, or (ii) which is acquired after January 1, 1981 if the original use of such property commences with the taxpayer and commences after such date,

"(B) with respect to which depreciation (or amortization in lieu of depreciation) is allowable, and which has a useful life (determined as of the time such property is placed in service) of 3 years, or more and

"(C)(i) which results in the utilization described in paragraph (1)(A), or (ii) the installation and operation of which is reasonably necessary to the achievement of such utilization.

"(3) APPLICATION TO PROPERTY WHICH IS ENERGY PROPERTY WITHOUT REGARD TO BEING QUALIFIED INDUSTRIAL ENERGY EFFICIENCY PROPERTY.—No property shall be treated as qualified industrial energy efficiency property if the taxpayer claims the energy percentage provided by section 46(a)(2)(C)(i) (other than by subclause VIII thereof) with respect to that property.

"(4) COMPUTATIONS PER UNIT OF OUTPUT.—The determinations required by paragraph (1) shall be made by comparing the BTU content of the energy (or of the oil and natural gas in the case of the determination required by subparagraph (1)(C)) used by the facility, process or processes per unit of output prior to the modification with the BTU content of the energy (or of the oil and natural gas in the case of the determination required by subparagraph (1)(C)) used by such facility, process or processes per unit of output upon completion of the modification. Computations under this subparagraph shall be made in accordance with subparagraph (6).

"(5) Reduction of credit where cost of energy savings excessive or where energy savings warrant investment without regard to credit.—Notwithstanding subclause (VIII) of section 46(a)(2)(C)(i), the energy investment credit allowable by section 38 for qualified industrial energy property shall be determined in accordance with the following table:

"If the adjusted BOE cost of the property is—	The energy investment credit is—
Less than $10	The reduced credit amount.
At least $10 but not more than $60	The section 46(a)(2)(C) amount.
Over $60	The alternative credit amount.

"(6) Definitions.—For purposes of paragraph (5)—

"(A) Adjusted boe cost.—The term 'Adjusted BOE cost' means, with respect to any qualified industrial energy efficiency property—

"(i) the section 46(a)(2)(C) amount with respect to such property, divided by

"(ii) the annual number of BOE's saved by the modification of which such property is a part.

"(B) Annual boe's saved by property.—The term 'annual number of BOE's saved' means, with respect to any property, an amount equal to—

"(i) the excess of the average number of BOE's utilized by the facility, process or processes per unit of output during a representative 1-year period before the use of the property commences over the number of BOE's utilized by such facility, process or processes per unit of output during any representative 12-month period occurring within the recomputation period, multiplied by

"(ii) the units of output during such 1-year period prior to the modification.

"(C) Reduced credit amount.—The term 'reduced credit amount' means the energy investment credit determined as if the energy percentage equaled the percentage which bears the same ratio to 20 percent as the BOE cost of the property bears to $10.

"(D) Section 46(a)(2)(C) amount.—The term 'section 46(a)(2)(C) amount' means the energy investment credit determined without regard to paragraph (5).

"(E) Alternative credit amount.—The term 'alternative credit amount' means, with respect to any qualified industrial energy efficiency property, an amount equal to—

"(i) $60, multiplied by

"(ii) the annual number of BOE's saved by the modification of which such property is a part.

"(F) BOE.—

"(i) In general.—One BOE shall be equal to 5.8 million Btu's.

"(ii) BOE for electrical energy.—In the case of electrical energy, BOE's shall be calculated by using a heat rate of 10,000 Btu's per kilowatt hour.

"(7) Special rules.—

"(A) Special rule for property placed in service within 2 years after date of enactment.—In the case of qualified industrial energy efficiency property which is placed in service during the 2-year period beginning on the date of the enactment of this subsection, the table contained in paragraph (5) shall be applied by substituting '$5' for '$10' each place it appears.

"(B) CERTAIN ENERGY SAVINGS DISREGARDED.—For purposes of this subsection, energy savings shall be disregarded which result from—

"(i) the installation of property other than qualified industrial energy efficiency property, or

"(ii) substantial changes in the character of either the output or input of the facility.

"(8) REDUCTION OF CREDIT WHERE CAPACITY INCREASES.—

"(A) IN GENERAL.—In the case of qualified industrial energy efficiency property which directly results in more than a 10-percent increase in the capacity of the facility, process or processes, the energy investment credit attributable to such property shall be an amount which bears the same ratio to such credit (determined without regard to this paragraph) as the capacity of the facility, process or processes prior to the modification bears to the capacity of the facility, process or processes upon completion of the modification.

"(B) CERTAIN CAPACITY INCREASES DISREGARDED.—For purposes of subparagraph (A), reductions in intermediate or finished product waste or reprocessing shall not be considered an increase in capacity.

"(9) TIME OF APPLICATION OF LIMITATIONS ON AMOUNT OF CREDIT.—

"(A) IN GENERAL.—The provisions of paragraphs (5) and (8) shall be applied as of the close of the recomputation period.

"(B) RECOMPUTATION PERIOD DEFINED.—For purposes of this paragraph, the term 'recomputation period' means, with respect to any modification, the period beginning on the date on which the qualified industrial energy efficiency property which is a part of such modification is placed in service and ending on the last day of the first taxable year beginning more than 180 days after such date.

"(C) RECAPTURE OF EXCESS CREDIT.—If the amount of the credit allowed under this subsection (determined without regard to paragraphs (5) and (8)) with respect to qualified industrial energy efficiency property exceeds the credit allowable under paragraphs (5) and (8), the tax imposed by this chapter for the recomputation year shall be increased under section 47 by the amount of such excess.

"(10) EXISTING DEFINED.—For purposes of this subsection, a facility shall be considered an 'existing facility' if industrial or commercial operations were conducted at that geographic location as of January 1, 1981.

"(11) PROCESS CARRIED ON IN A FACILITY ON JANUARY 1, 1981.—A process which was carried on in an existing facility on January 1, 1981, shall not thereafter cease to be treated as such solely because capitalizable expenditures are paid or incurred with respect to such process after January 1, 1981, or the chemical, physical or mechanical action by which the desired result is accomplished is modified.

"(12) REPLACEMENT OF PROCESS.—In the case of a replacement of a process or processes carried on in an existing facility on January 1, 1981, no property shall be treated as qualified industrial energy efficiency property if—

"(A) the replaced property is not retired from service, except for property maintained as standby or temporary replacement property for the qualified industrial energy efficiency property during periods for which such qualified property is inoperable due to an emergency or on account of repairs or maintenance, or

"(B) the replacement property is placed in service on a site other than the site of the replaced property or reasonably adjacent to that site.

"(13) QUALIFIED INVESTMENT.—In determining the amount of the taxpayer's qualified investment in qualified industrial energy efficiency property, for purposes of section 46(c)(1), the applicable percentage shall be 100 percent for items of such property without regard to the useful life of any particular item of such property.".

(b) CONFORMING AMENDMENTS.—

(1) TREATMENT AS ENERGY PROPERTY.—Subparagraph (a) of section 48(l)(2) (defining energy property) is amended by striking out "or" at the end of clause (viii), by inserting "or" at the end of clause (ix), and by inserting after clause (ix) the following new clause:

"(x) qualified industrial energy efficiency property.".

(2) QUALIFIED INDUSTRIAL ENERGY EFFICIENCY PROPERTY DOES NOT INCLUDE PUBLIC UTILITY PROPERTY.—Paragraph (17) of section 48(l) is amended by striking out "and 'cogeneration property'" and

inserting in lieu thereof "'cogeneration property', and 'qualified industrial energy efficiency property'".

(c) Effective Date.—The amendments made by this section shall apply to taxable years ending after December 31, 1980.

SEC. 4. AMENDMENTS RELATING TO ENERGY PROPERTY.

(a) Amendments Relating to Alternative Energy Property.—

(1) Equipment for converting alternate substances into electricity eligible for credit.—Clause (iii) of section 48(l)(3)(A) (defining alternative energy property) is amended by inserting before the comma "or into electricity, but only, in the case of electricity, up to (but not including) the electrical transmission stage.".

(2) Definition of boiler.—Paragraph (3) of section 48(l) (defining alternative energy property) is amended by adding at the end thereof the following new subparagraph:

"(D) Boiler.—For purposes of subparagraph (A), the term 'boiler' means a system for producing a vapor or high pressure liquid stream from water or some other working fluid. Heat is produced by combustion or otherwise, and is transferred through metal or ceramic tube walls to generate a vapor or high pressure liquid stream at a positive pressure within the boiler vessel.".

(3) HEAT TREATING FURNACES, MELT FURNACES AND MODIFICATIONS.—

(A) IN GENERAL.—Subparagraph (A) of section 48(l)(3) (defining alternative energy property) is amended by striking out 'and' and the end of clause (viii), by striking out the period at the end of clause (ix) and inserting in lieu thereof a comma, and by inserting after clause (ix) the following new clauses:

"(x) heat treating furnaces, the primary fuel for which will be an alternate substance,

"(xi) melt furnaces, if such furnaces use no fuel, or if the primary fuel for which will be an alternate substance, and

"(xii) equipment designed to modify existing equipment in a facility which was using an alternate substance as a primary fuel on October 1, 1978, provided such modification reduces the use of fuels other than alternate substances at the existing facility.".

(B) CONFORMING AMENDMENTS.—

(i) Paragraph (3) of section 48(l), as amended by paragraph (2), is amended by adding at the end thereof the following new subparagraphs:

"(E) MELT FURNACE.—The term 'melt furnace' includes any device, apparatus, or configuration which directly or indirectly converts solids into liquids or gases through the use of heat.

"(F) HEAT TREATING FURNACE.—For purposes of subparagraph (A), the term 'heat treating furnace' means any device, apparatus, or configuration which heats materials (such as metals) for the purpose of obtaining improved properties (such as through normalizing or annealing).".

(ii) Subparagraph (A) of section 48(l)(3) is amended—

(I) by striking out "or (v)" in clause (vi) and inserting in lieu thereof "(v), (x), or (xi)", and

(II) by striking out "or (vi)" in clause (vii) and inserting lieu thereof "(vi), (x), or (xi)".

(4) CERTAIN SUBSTANCES TREATED AS ALTERNATE SUBSTANCES.—Subparagraph (B) of section 48(l)(3) (defining alternative energy property) is amend-

ed by adding at the end thereof the following new sentence: "The term 'alternate substance' includes petroleum coke; petroleum pitch; synthetic fuels; and any other product produced from any alternate substance, whether or not such product has undergone a chemical change in the process of its production.".

(5) PRIMARY FUEL DEFINED.—Paragraph (3) of section 48(l), as amended by paragraphs (2) and (3)(B)(i), is amended by adding at the end thereof the following new subparagraph:

"(G) PRIMARY FUEL.—For purposes of this paragraph—

"(i) IN GENERAL.—An alternate substance shall be considered the 'primary fuel' if any alternate substance or combination of alternate substances accounts for more than 50 percent of the Btu's used by any item of alternative energy property.

"(ii) 50-PERCENT RULE NOT REQUIRED IN CERTAIN CASES.—Notwithstanding clauses (i), (ii), (x), (xi), and (xii) of subparagraph (A), the taxpayer shall not be required to comply with a primary fuel requirement for any taxable year—

"(I) if the taxpayer is unable to obtain the alternate substance for reasons (other than cost thereof) beyond his control, or

"(II) in the case of the 12-month period beginning on the date the boiler, burner, or furnace is placed in service, to the extent a fuel other than an alternate substance is used by reason of startup conditions, requirements or timing.

"(iii) ELECTRICITY TO SATISFY PRIMARY FUEL REQUIREMENT IN CERTAIN CASES.—Electricity shall be treated as an alternate substance for purposes of the primary fuel requirement in clauses (i), (ii), (x), (xi), and (xii) of subparagraph (A) if—

"(I) the electricity is generated by the taxpayer primarily from an alternate substance, or

"(II) the electricity is purchased by the taxpayer and the taxpayer establishes to the satisfaction of the Secretary that the electricity reduces the need for onsite use of oil or gas and that more than 50 percent of the electricity purchased by the taxpayer for that use is generated from an alternate substance.".

(b) AMENDMENTS RELATING TO SPECIALLY DEFINED ENERGY PROPERTY.—Paragraph (5) of section 48(l) (defining specially defined energy property) is amended to read as follows:

"(5) SPECIALLY DEFINED ENERGY PROPERTY.—

"(A) IN GENERAL.—The term 'specially defined energy property' means—

"(i) a heat wheel,

"(ii) a heat exchanger,

"(iii) a waste heat boiler,

"(iv) a heat pipe,

"(v) an automatic energy control system,

"(vi) a turbulator,

"(vii) a combustible gas recovery system,

"(viii) an economizer,

"(ix) modifications to alumina electrolytic cells,

"(x) industrial insulation,

"(xi) an industrial heat pump,

"(xii) modifications to burners, combustion systems, or process furnaces,

"(xiii) batch operations conversion equipment,

"(xiv) product separation and dewatering equipment,

"(xv) fluid bed dryers and calciners, or

"(xvi) any other property of a kind specified by the Secretary by regulations,

the installation of which is for the principal purpose of reducing the amount of energy consumed in any existing industrial or commercial process, processes or activities and which is installed in connection with an existing industrial or commercial facility. The Secretary shall not specify any property under clause (xvi) unless he determines that such specifications meet the requirements of subparagraph (C) of this section. Any property specified by the Secretary under clause (xvi) shall be deemed qualified specially defined energy property as of October 1, 1978.

"(B) DEFINITIONS RELATED TO SUBPARAGRAPH (A).—

"(i) HEAT EXCHANGER.—The term 'heat exchanger'—

"(I) means a configuration of equipment used to transfer energy to incoming combustion air, or lower temperature fluids, gases, or solids with or without the interposition of heat transfer surfaces, and

"(II) includes but is not limited to devices commonly referred to as recuperators, regenerators, and preheaters.

"(ii) WASTE HEAT BOILER.—The term 'waste heat boiler' means any boiler (within the meaning of paragraph (3)(D)) which uses waste heat from whatever source derived.

"(iii) AUTOMATIC ENERGY CONTROL SYSTEM.—The term 'automatic energy control system'—

"(I) means equipment comprising a system which by automatic controls reduces the energy consumed in environmental space conditioning or in other industrial or commercial processes or activities, and

"(II) includes, but is not limited to, systems which automatically control fuel or electric power inputs to a combustion system or process or the utilization or transfer of energy within a process, or which automatically control process variables (other than energy) in order to minimize energy consumption.

"(iv) COMBUSTIBLE GAS RECOVERY SYSTEM.—The term 'combustible gas recovery system' means equipment comprising a system to recover, and condition for use, unburned fuel or other combustible material from combustion exhaust gases or process streams.

"(v) INDUSTRIAL INSULATION.—The term 'industrial insulation' means any material which—

"(I) is designed to possess a material resistance to the flow of heat, and

"(II) is to be used primarily to retard loss or gain of such heat with respect to pipes, tanks, vessels, equipment, or processes, but not with respect to buildings or structural components thereof.

"(vi) INDUSTRIAL HEAT PUMP.—The term 'industrial heat pump' means equipment which—

"(I) uses the compression and expansion of a contained fluid to extract heat from a gas or liquid and transfer it to another gas or liquid at another temperature, or

"(II) uses nonmechanical means to achieve an equivalent result.

"(vii) BATCH OPERATIONS CONVERSION EQUIPMENT.—

"(I) IN GENERAL.—The term 'batch operations conversion equipment' means equipment to permit conversions from batch operations to one or more continuous processes.

"(II) BATCH OPERATIONS.—The term 'batch operations' means operations where temporary storage of materials in process results in heat transfer to the surrounding environment, or where such handling or temporary storage is accompanied by the waste or reprocessing of more than 5 percent of the material in process.

"(III) CONTINUOUS PROCESS.—The term 'continuous process' means a process which minimizes the handling or temporary storage of the material in process so as to reduce either the amount of heat transfer to the surrounding environment or the amount of waste or reprocessed material.

"(viii) PRODUCT SEPARATION AND DEWATERING EQUIPMENT.—The term 'product separation and dewatering equipment' means equipment designed to separate water or other liquids or volatiles from process materials.

"(ix) FLUID BED DRYERS AND CALCINERS.—The term 'fluid bed dryers and calciners' means equipment in which solid particles are chemically processed by direct heat exchange with a gas or liquid. The gas or liquid passes through a bed of solid particles at sufficient velocity to physically suspend the particles in the gas or liquid stream.

"(C) SPECIFICATION OF ADDITIONAL ITEMS BY SECRETARY.—The Secretary shall specify property under subparagraph (A)(xvi) at his discretion, or if—

"(i) such property is recommended for specification to the Secretary by the Secretary of Energy, and

"(ii) there are no generally available and substantial Federal subsidies for such property. The Secretary shall act on a recommendation of the Secretary of Energy within 6 months of its receipt.".

(c) AMENDMENTS RELATED TO RECYCLING EQUIPMENT.

(1) IN GENERAL.—Subparagraph (A) of section 48(l)(6), (defining recycling equipment) is amended to read as follows:

(A) IN GENERAL.—The term "recycling equipment" means any property which is used exclusively—

(i) for the unloading, transfer, storage, reclaiming from such storage, sorting, and preparation (including, but not limited to, washing, crushing, drying and weighing) of solid waste, or

(ii) in the recycling of solid waste.

(2) INCLUSION OF CERTAIN EQUIPMENT.—

(A) IN GENERAL.—Subparagraph (D) of section 48(l)(6) relating to inclusion of certain equipment is amended to read as follows:

"(D) CERTAIN EQUIPMENT INCLUDED.—The term 'recycling equipment' includes any new or replacement property which is used in the conversion or processing of solid waste into a fuel or into useful energy such as steam, electricity, or hot water and any property which is used in the processing of solid waste to recover and store other reusable resources and materials, including but not limited to paper, ferrous metals, nonferrous metals, and glass.".

(B) APPLICATION WITH SUBPARAGRAPH (B)(i).—Subparagraph (B)(i) of section 48(l)(6) (relating to equipment not included) is amended by striking out "any" and inserting in lieu thereof "except as provided in subparagraph (D), any".

(3) SOLID WASTE DEFINED.—Section 48(l)(6) is amended by adding at the end thereof the following new subparagraph:

"(E) 'SOLID WASTE' DEFINED.—For purposes of this section, the term 'solid waste' means garbage, refuse, and other discarded solid, semisolid and liquid materials, including materials resulting from industrial, commercial, agricultural and community activities.".

(d) AMENDMENTS RELATED TO CONGENERATION EQUIPMENT.—Paragraph (14) of section 48(l) (defining cogeneration equipment) is amended to read as follows:

"(14) COGENERATION EQUIPMENT.—

"(A) IN GENERAL.—The term cogeneration equipment means property comprising a system for using the same fuel for the sequential generation of electric power and/or mechanical shaft power in combination with qualified energy at a facility at which, as of January 1, 1980, electricity, mechanical shaft power, or qualified energy was produced.

"(B) QUALIFIED ENERGY.—The term 'qualified energy' means steam, heat, or other forms of useful energy (other than electric power and/or mechanical shaft power) to be used for industrial, commercial, or space-heating purposes (other than in the production of electric power and/or mechanical shaft power).".

(e) BIOMASS PROPERTY.—Paragraph (15) of section 48(l) (relating to biomass property) is amended by striking out the word "and" in subparagraph (i) after the word "substance" and inserting in lieu thereof a comma, and by inserting after the phrase "such coal" the following: "and does not include source separated, separately collected, recyclable waste paper, and".

(f) PUBLIC UTILITY PROPERTY.—Paragraph (17) of section 48(l) (relating to public utility property) is amended by inserting after the phrase "alternative energy property" the following: "specially defined energy property, qualified industrial energy efficiency property," and by inserting before the period at the end thereof the following: ", unless such property is installed in connection with a qualifying small power production facility or a qualifying cogeneration facility (within the meaning of paragraph (17)(C) and (18)(B) of section 3 of the Federal Power Act).

(g) AMENDMENTS TO DEFINITION OF EXISTING.—Paragraph (10) of section 48(l) (defining existing) is amended to read as follows:

"(10) EXISTING DEFINED.—For purposes of this subsection,

"(A) EXISTING FACILITY.—When used in connection with a facility, a facility shall be considered an 'existing facility' if industrial or commercial operations were conducted at that geographic location as of October 1, 1978.

"(B) EXISTING PROCESS.—When used in connection with a process, a process shall be considered an 'existing process' if such process was carried on at that facility on October 1, 1978.

"(C) EXISTING EQUIPMENT.—When used in connection with an item of equipment, an item of equipment shall be considered 'existing equipment' if it was placed in service prior to October 1, 1978.

"(D) PROCESS CARRIED ON IN A FACILITY ON OCTOBER 1, 1978.—A process which was carried on in an existing facility on October 1, 1978 shall not cease to be treated as such solely because capitalizable expenditures are paid or incurred with respect to such process after October 1, 1978, or the chemical, physical or mechanical action by which the desired result is accomplished is modified.".

(h) REPLACEMENT OF EQUIPMENT OR PROCESS.—Section 48(l) (relating to energy property) is amended by adding the following new section at the end thereof:

"(18) REPLACEMENT OF EQUIPMENT OR PROCESS.—In the case of a replacement of an item of equipment or one or more processes in service or carried on in an existing facility on October 1, 1978, no property shall be treated as energy property if—

"(A) the replaced property is not retired from service, except for property maintained as standby or temporary replacement property for the energy property during periods for which such property is inoperable due to an emergency or on account of repairs or maintenance, or

"(B) the replacement property is placed in service on a site other than the site of the replaced property or reasonably adjacent to that site.".

(i) INCREMENTAL COST RULE.—Section 48(l) (relating to energy property) is amended by adding the following new section at the end thereof:

"(19) INCREMENTAL COST RULE.—Property, other than alternative energy property, recycling equipment, qualified hydroelectric generating property, or cogeneration equipment, which otherwise qualifies as energy property under this section but which also substantially increases the operating capacity of the existing process, processes or facility, shall only qualify to the extent of the 'energy component' of the property.

"(A) For purposes of this subparagraph, a substantial increase in capacity is defined as an increase as a result of the installation of the otherwise qualified energy property of more than 10 percent over the capacity of the process, processes or facility prior to the installation of the otherwise qualified property.

"(B) CERTAIN CAPACITY INCREASES DISREGARDED.—For purposes of subparagraph (A) reductions in intermediate or finished product waste or reprocessing shall not be considered an increase in capacity.

"(C) The term 'energy component' means a pro rata allocation of the total cost of the installation of the otherwise qualified industrial energy property, determined by multiplying the total cost by a fraction, the numerator of which is the energy related cost of the equipment and the denominator of which is the total cost.

"(D) In the case of property which qualifies under section 48(l)(3) (alternative energy property) 48(l)(6) (recycling equipment), 48(l)(13) (qualified hydroelectric generating property), and 48(l)(14) (cogeneration equipment), no reductions in the credit otherwise allowable under this section shall be required.".

"(j) EFFECTIVE DATE.—The amendments made by this section shall apply to periods after the date of enactment of this Act, under rules similar to the rules of section 48(m) of the Internal Revenue Code of 1954.

SEC. 5. ASSOCIATED PROPERTY.

"(a) IN GENERAL.—Subsection (l) of section 48 (defining energy property) is amended by adding at the end thereof the following new subparagraph:

"(20) ASSOCIATED PROPERTY.—

"(A) GENERAL RULE.—Any property associated with alternative energy property, specially defined energy property, recycling equipment, or cogeneration equipment shall be treated as qualified industrial energy efficiency property.

"(B) WHEN PROPERTY ASSOCIATED.—For the purposes of subparagraph (A), property shall be considered associated if:

"(i) in the case of property associated with alternative energy property, the installation and operation of such property is reasonably necessary to enable the utilization of an alternate substance, or "(ii) in the case of property associated with specially defined energy property, the installation and operation of such property is reasonably necessary for realization of the reduction of the amount of energy consumed or heat wasted by the process, processes or activity, or

"(iii) in the case of property associated with recycling equipment, the installation and operation of such property is reasonably necessary to achieve the sorting, preparation or recycling, or

"(iv) in the case of property associated with cogeneration equipment, the installation and operation of such property is reasonably necessary to achieve the energy savings intended by the installation of the cogeneration equipment, or

"(v) in the case of property associated with qualified industrial energy efficiency property, the installation and operation of such property is reasonably necessary for the utilization of less energy per unit of output.".

(b) CONFORMING AMENDMENTS.—

(1) ENERGY PERCENTAGE.—Subparagraph (C) of section 46(a)(2) (defining energy percentage) is amended by adding at the end thereof the following new clause:

"(vi) ASSOCIATED PROPERTY.—In the case of property described in section 48(l)(20), the energy percentage shall be the same as the energy percentage determined under clause (i) for the energy property it was installed in connection with.".

(2) ENERGY PROPERTY.—Subparagraph (A) of section 48(l)(2) (defining energy property), as amended by section 3(b)(1), is amended by striking out "or" at the end of clause (ix), by inserting "or" at the end of clause (x), and by inserting after clause (x) the following new clause:

"(xi) associated property,".

"(c) EFFECTIVE DATE.—The amendments made by this section shall apply to taxable years ending after December 31, 1980.

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97TH CONGRESS
1ST SESSION

S. 1288

To amend the Internal Revenue Code of 1954 to encourage greater energy conservation by commercial businesses, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MAY 21 (legislative day, APRIL 27), 1981

Mr. DURENBERGER introduced the following bill; which was read twice and referred to the Committee on Finance

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A BILL

To amend the Internal Revenue Code of 1954 to encourage greater energy conservation by commercial businesses, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Commercial Business Energy Tax Credit Act of 1981".

SEC. 2. SPECIALLY DEFINED ENERGY PROPERTY.

Paragraph (5) of section 48(l) of the Internal Revenue Code of 1954 (defining specially defined energy property) is amended—

(1) by striking out "or" at the end of subparagraph (L), and

(2) by striking out all that follows subparagraph (L) and inserting in lieu thereof the following:

"(M) an energy management or control system or device, including, but not limited to—

"(i) a mixed air, cooling coil discharge, and hot deck temperature reset device,

"(ii) any economizer or enthalpy controls,

"(iii) a thermostatic radiator valve,

"(iv) a computer or microprocessor control system which adjusts lighting, or which adjusts the supply of heating, cooling, and ventilation to meet illuminating or space conditioning requirements,

"(v) automatic equipment settings controls, load shedding devices and relay devices, including associated hardware,

"(vi) variable speed motor control packages combining a microcomputer with an alternating current inverter, and "(vii) equipment required to operate or convert to variable energy supply systems,

"(N) a heat pump apparatus, cooling tower, condenser or evaporator which modifies or replaces existing components in heating, ventilating, air-conditioning or refrigeration systems,

"(O) an energy redistribution system, device or component for heating or cooling, including a duct, pipe, vent, pump or fan which exchanges the air, gas or fluids within or between rooms to increase or decrease temperature or humidity,

"(P) a furnace or boiler replacement burner designed to achieve a reduction in the amount of fuel consumed as a result of increased combustion efficiency,

"(Q) a device or control package retrofitted to an electric motor to improve its efficiency,

"(R) a mechanical or programable timer or motion detector to turn on or off energy using equipment,

"(S) a meter or submeter which displays or records the cost or quantity of energy usage,

"(T) a replacement, modification or conversion of a lighting system, "(U) a device which modifies refrigeration equipment, including—

"(i) a compressor or humidity control,

"(ii) a device for automatically defrosting refrigerator or freezer equipment,

"(iii) a demand waste heat or ambient air defrost system,

"(iv) a heat reclaim coil,

"(v) a temperature compensated evaporator pressure regulator, and

"(vi) a refrigerator fixture cover or door,

"(V) an energy storage system, including a heat sink,

"(W) equipment used in the preparation, storage, cooking, display, or serving of food or cleaning of dishware which incorporates design features specifically engineered to reduce energy consumption, and which replaces similar equipment of the taxpayer purchased before January 1, 1976, or

"(X) any other property of a kind specified by the Secretary by regulations,

which is installed, and principal purpose of which is reducing the amount of energy consumed, in connection with any existing industrial, retail or commercial process, activity, facility, building or equipment. The Secretary shall not specify any property under subparagraph (W) unless he determines that such specification meets the requirements of paragraph (9) of section 44C(c) for specification of items under section 44C(c)(4)(A)(viii).".

SEC. 3. INSULATION PROPERTY.

(a) IN GENERAL.—Subparagraph (A) of section 48(l)(2) (defining energy property) is amended—

(1) by striking out "or" at the end of clause (viii),

(2) by inserting "or" at the end of clause (ix), and

(3) by adding at the end thereof the following new clause:

"(x) insulation property,".

(b) INSULATION PROPERTY DEFINED.—Subsection (l) of section 48 of the Internal Revenue Code of 1954 (relating to energy property) is amended by adding after paragraph (17) the following new paragraph:

"(18) INSULATION PROPERTY.—The term 'insulation property' means property which is specifically and primarily designed to reduce when installed in or on an existing industrial, retail or commercial building or facility the heat loss or gain of such building or facility, including, but not limited to—

"(A) insulation materials installed as part of the building envelope including the wall, ceiling, floor, and roof,

"(B) insulation materials installed in connection with mechanical system equipment, ducts and piping,

"(C) heat reflecting and heat absorbing window and door materials and reflective and heat absorbing window and door films and coatings,

"(D) storm or thermal windows or doors for the exterior of a building,

"(E) thermal curtains which separate areas of different temperatures,

"(F) vestibules,

"(G) exterior skylights which have one or more sheets of glazing or other type of panel, and

"(H) caulking or weatherstripping of an exterior door, window, or skylight.".

SEC. 4. CHANGES IN AMOUNT AND PERIOD OF APPLICATION OF ENERGY PERCENTAGE.

The table contained in clause (i) of subparagraph (C) of section 46(a)(2) (relating to energy percentage) is amended by adding at the end thereof the following new subclauses:

"VII. Specially Defined Energy Property.—Property described in section 48(l)(5).	20 percent...	January 1, 1981 ...	December 31, 1986.
"VIII. Insulation Property.—Property described in section 48(l)(17).	20 percent...	January 1, 1981 ...	December 31, 1986.".

SEC. 5. EFFECTIVE DATE.

The amendments made by this Act shall apply to periods beginning after December 31, 1980, under rules similar to the rules contained in section 48(m) of the Internal Revenue Code of 1954.

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Malcolm Wallop news
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Contact: Karen Deike (202)224-0803

STATEMENT OF SENATOR MALCOLM WALLOP, CHAIRMAN
Senate Subcommittee on Energy and Agricultural Taxation
October 19, 1981
Senate Committee on Finance

Today's hearing is for the purpose of receiving public and Administration comment on two bills before the Senate concerning energy conservation tax credits. In opening this hearing, I would like to take a few moments to comment on energy conservation tax credits, and more specifically, S. 750, the "Industrial Energy Security Tax Incentives Act of 1981."

As you are probably aware, energy conservation tax credits have been a hot topic of debate not only in Washington, but across the country. Following the President's recent address to the nation the Administration announced that the elimination of energy conservation tax credits was one area under review as a possible "revenue enhancer." However, it did not take long for the Administration to learn what the Congress already knew -- that these credits have bipartisan, nationwide support. It should have come as no surprise. There is no other factor which plays such a significant role in American economic life as energy. And while its importance has never been discounted, the role of the federal government in artificially controlling supplies as well as prices left Americans with the illusion that energy supplies would always be cheap and abundant virtually by constitutional blessing. The reality behind that illusion became all too clear in 1973 and again in 1977. This country -- its economy, its people -- were the captives of the "petro-politics" of the Middle East.

We have learned from those mistakes, and it has become a national priority to become energy self-sufficient. We have decontrolled oil, encouraged business to convert to coal -- our greatest domestic energy resource -- and we have provided programs and incentives for the development of synthetic fuel production. But there is another resource that we have barely begun to tap. Robert Stobaugh and Daniel Yergin of Harvard, in their book Energy Future called it "conservation energy." It is a source that the National Academy of Sciences' Committee on Nuclear and Alternative Energy Systems cited as having the potential of saving 5.5 million barrels of oil per day by the year 2010 in the industrial sector alone -- a figure which eclipses the volume of our present oil imports.

It is unfortunate that the last Administration chose to equate energy conservation solely with sacrifice and stagnation. Adding to the already significant burden of public misery, they preached democratized misery. In reality, energy conservation can enhance American productivity while making a significant contribution to our national security. It is a program which, if properly implemented, is consistent in every way with the present Administration's philosophy and this nation's program of economic recovery. It is not question of doing with less, but producing more, with less energy consumption.

The question has been posed as to whether energy conservation tax credits belong in a tax code, or whether the free market should dictate what investments the industrial sector makes. You will find no stronger advocate for free market economics than me. I strongly believe, however, that the past policies of the federal government are in large part responsible for the energy problems we face today. The perceived need for interference in the past dictates that we now move quickly to adopt aggressive policies that accelerate the energy-efficient investments in plant and equipment. Investments that would have already been made had it not been for the folly of those past policies. But beyond that, there is the overriding concern which must be addressed by the Administration, and that is national security. An effective energy conservation program can make a significant contribution in shielding us from the political instability which daily threatens our principal sources of imported oil.

Even today you will hear the argument that American business must take into account the inevitability of future supply disruptions and displacements. And when things get bad enough, the business community can depend on the strategic petroleum reserve to keep the economy going. I suggest that too many roles are conceived for that reserve. It is, as its name indicates, a strategic reserve to be used in time of crisis. Further, no corporate planner can -- nor is he or she expected to -- anticipate when and if there will be another significant disruption in energy supplies. Energy resources can be stockpiled by business only within practical economic parameters. Common sense -- business sense -- dictates that limited capital will not be devoted, in significant part, to planning for contingencies.

S. 750 represents what I believe to be a creative step toward implementing a coherent, cost-effective energy policy. It is bottomed on the philosophy of demonstrated energy savings. Unlike the present credits which remind me of the old Chrysler commercial gimmick of "buy a car -- get a check," S. 750 requires that energy savings must be proven if an investment is to qualify for a tax credit. And even then a full credit is not guaranteed. Should any installation achieve such a significant savings in energy that the investment should have been a priority item without the credit -- the credit is proportionately reduced. On the other hand, if the energy savings are disproportionately small in relation to the amount of the investment, then the amount of tax credit which can be taken is restricted. I recognize that the 20% credit provided by the bill may well be too rich for the government's palate right now.

Under free market forces business has already made the easy investments in energy conservation -- the so-called first tier investments. The second tier investments are of course more expensive. On business drawing boards across the country are plans for new, more efficient plants and equipment to replace those which presently exist -- and certainly most of those investments will be made at some point. S. 750 is designed to get those plants into production sooner, rather than later. We must use the present energy respite to assure that the inevitable supply disruptions of the future are of minimal consequence to the American economy.

Energy policy is not, cannot simply be a function of natural resource development alone. We must make every effort to seek and implement a sound, well-balanced approach which exploits the full potential of American ingenuity as well as its resources. It is my sincere hope that the Administration will join us in developing such a program.

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STATEMENT OF SENATOR DOLE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION HEARING

OCTOBER 19, 1981

MR. CHAIRMAN:

TODAY WE SHALL HEAR FROM THE PUBLIC ON TWO BILLS THAT WOULD SIGNIFICANTLY EXPAND THE SCOPE AND DURATION OF THE ENERGY TAX CREDIT PROVISIONS OF THE CODE. BOTH BILLS WOULD DOUBLE THE CREDIT, MAKE IT AVAILABLE THROUGH 1985, AND EXPAND THE DEFINITIONS OF CREDITABLE INVESTMENTS. S. 750, IN ADDITION, WOULD MAKE A FUNDAMENTAL CHANGE IN THE ENERGY TAX CREDIT BY CREATING A NEW CATEGORY OF CREDITABLE INVESTMENT WHERE THE TAXPAYER MAKES AN INVESTMENT IN PROPERTY THAT CAN BE DEMONSTRATED TO SAVE ENERGY. THIS IS A DEPARTURE FROM THE "SHOPPING LIST" APPROACH TO DEFINING CREDITABLE PROPERTY IN PRESENT LAW.

ALL OF THESE PROPOSALS PROVIDE AN INTERESTING COUNTERPOINT TO THE YET-TO-BE-DETAILED ADMINISTRATION PROPOSAL TO PARE BACK OR REFORM THE ENERGY CREDITS. WHILE WE DO NOT KNOW THE SPECIFICS OF THAT PROPOSAL WE HAVE BEEN IN TOUCH WITH THE TREASURY DEPARTMENT AND ARE HOPEFUL THAT CAREFUL STUDY OF THE MORE USEFUL AND EFFECTIVE OF THE CREDITS WILL BE UNDERTAKEN BEFORE ALL THE CREDITS ARE REPEALED.

THOUGH WE SHOULD PROCEED CAREFULLY, IT MIGHT WELL BE THAT MANY OF THE ENERGY CREDITS ARE "OBSOLETE INCENTIVES". THE CREDITS WERE ENACTED IN A TIME OF UNPARALLELED OIL PRICE INSTABILITY WHEN IMPORTED FUEL COSTS WERE SKYROCKETING AND DOMESTIC PRICES WERE A CONFUSING AND UNECONOMIC PATCHWORK DUE TO THE UNEVEN PROGRESS OF DEREGULATION. IN THAT VOLATILE TIME IT WAS GENERALLY

ADMITTED THAT THE MARKET WAS NOT OPERATING PROPERLY TO ALLOCATE SCARCE ENERGY RESOURCES. SOME OIL WAS TOO CHEAP, SOME GAS WAS TOO CHEAP, AND NO ONE KNEW WHAT THE FUTURE MIGHT BRING. AGAINST THAT BACKGROUND, THE ENERGY TAX CREDITS WERE ENACTED, SOLELY AS TEMPORARY MEASURES -- THEY ALL WERE MEANT TO EXPIRE IN ONLY A FEW YEARS, WHEN THE MARKET FORCES BEGAN TO WORK PROPERLY AGAIN. THEY WERE NOT MEANT AS PERMANENT FEDERAL SUBSIDIES.

NOW OIL IS DEREGULATED AND THE PRICE APPEARS TO HAVE STABILIZED. NATURAL GAS IS NOT FAR BEHIND. MUCH OF THE GAINS TO BE REALIZED FROM INDUSTRIAL (AND EVEN RESIDENTIAL) CONSERVATION EFFORTS APPEAR TO HAVE BEEN WON. THE PICTURE IS NOT ABSOLUTELY ROSY BUT AT LEAST IT IS MUCH CLEARER THAN WHEN THE CREDITS WERE ENACTED. AT THE LEAST, IT APPEARS THAT THIS IS AN APPROPRIATE TIME TO INQUIRE WHETHER THE ENERGY TAX CREDITS ARE OBSOLETE OR NOT.

WHILE THE INFANT SOLAR AND ALCOHOL FUEL INDUSTRIES MAY STILL NEED A HELPING HAND THERE MAY BE LITTLE REASON TO INTERFERE WITH THE MAINSTREAM FUEL CONSERVATION MARKETPLACE.

THAT IS WHAT THIS HEARING IS FOR -- TO EDUCATE US AS TO WHICH PORTIONS OF A TEMPORARY TAX INCENTIVE SYSTEM HAVE SUCCEEDED, WHICH NEED MORE TIME TO SUCCEED, AND WHICH WILL NEVER SUCCEED.

Senator WALLOP. Good morning. We will start in the absence of the representatives from the Treasury Department and hope that perhaps by the time my statement is over they may be here. If not, we will move right into the first panel.

Senator GRASSLEY. Mr. Chairman, I have no opening statement per se, but I do want to commend you for holding these hearings.

I believe in tax credits as an incentive for energy conservation. This hearing is related to bills for the broadening of the concept to new areas to further encourage energy conservation.

At the same time the President is suggesting early phaseout, elimination, or cutting back some existing tax credits for energy conservation.

We find ourselves as a Committee on Finance in an awkward position: between proposals to expand and proposals to contract.

I've long supported tax credits as a better way to support energy conservation than voting subsidies from the Treasury. As a Member of the House of Representatives I introduced legislation of my own on this subject.

I want to monitor these hearings even though I'm not a member of the subcommittee because of my belief in tax credits as well as an acknowledged need to conserve energy and thus to be less reliant on OPEC.

STATEMENT OF HON. MALCOLM WALLOP, U.S. SENATOR FROM THE STATE OF WYOMING

Senator WALLOP. Today's hearing is for the purpose of receiving public and administration comment on two bills before the Senate concerning energy conservation tax credits. In opening this hearing I would like to take a few moments to comment on energy conservation tax credits, and, more specifically, S. 750, the Industrial Energy Security Tax Incentive Act, from 1981.

As you are probably aware, energy conservation tax credits have been a hot topic of debate not only in Washington but across the country. Following the President's recent address to the Nation the administration announced that the elimination of energy conservation tax credits was one area under review as a possible revenue enhancer. However, it did not take long for the administration to learn what Congress already knew: these credits have bipartisan nationwide support. It should have come as no surprise. There is no other factor which plays such a significant role in the American economy as energy. And, while its importance has never been discounted, the role of the Federal Government in artifically controlling supplies as well as prices left Americans with the illusion that energy supplies would always be cheap and abundant, virtually by constitutional blessing.

The reality behind that illusion became all too clear in 1973 and again in 1977. This country, its economy, its people, were the captives of the petropolitics of the Middle East. We have learned from those mistakes, and it has become a national priority to become energy self-sufficient. We have decontrolled oil, encouraged business to convert to coal, our greatest domestic energy resource, and we have provided programs and incentives for the development of synthetic fuel production.

But there is another resource that we have barely begun to tap. Robert Stobaugh and Daniel Yergin of Harvard in their book Energy Future called it "conservation energy." It is the source that the National Academy of Sciences Committee on Nuclear and Alternative Energy cited as having the potential of saving 5.5 million barrels of oil per day by the year 2010 in the industrial sector alone, a figure which eclipses the volume of our present oil imports.

It is unfortunate that the last administration chose to equate energy conservation solely with sacrifice and stagnation; adding to the already significant burden of public misery, they preached a democratized misery.

In reality, energy conservation can enhance American productivity. Indeed, the whole definition of conservation is to produce more with the same amount or even less energy, and that equates with the President's own idea of restoring productivity to the American economy.

It is a program which, if properly implemented, is consistent in every way with the present administration's philosophy. It is not a question of doing with less, but producing more with less energy consumption. The question has been posed as to whether energy conservation tax credits alone belong in the Tax Code, or whether the free market should dictate what investments the industrial sector makes. You will find no stronger advocate for free market economics than I. I strongly believe, however, that the past policies of the Federal Government are in large part responsible for the energy problems we face today.

The perceived need for interference in the past dictates that we now move quickly to adopt agressive policies that accelerate the energy-efficient investments in plant and equipment, investments that would have already been made had it not been for the folly of past policy.

But, beyond that, there is the overriding concern which must be addressed by the administration, and that is national security. Effective energy conservation programs can make a significant contribution in shielding us from the political instability which daily threatens our principal sources of imported oil.

Even today you will hear the argument that American business must take into account the inevitabilities of future supply disruptions and displacement. And when things get bad enough, the business community can depend on the strategic petroleum reserves to keep the economy going. I suggest that too many roles are conceived for that reserve. It is, as its name indicates, a strategic reserve to be used in time of crisis. Further, no corporate plant can, nor is he or she expected to, anticipate when and if there will be another significant disruption in energy supplies.

Energy resources can be stockpiled by a business only within practical economic parameters. Commonsense, business sense, dictates that limited capital will not be devoted in significant part to planning for contingency. S. 750 represents what I believe to be a creative step towards implementing a coherent, cost-effective energy policy. It is bottomed on the philosophy of demonstrated energy saving, unlike the present credits which remind me of the old Chrysler commercial gimmick of "Buy a car and get a check." S. 750 requires that energy savings must be demonstrated if an investment is to qualify for a tax credit. Even then, a full credit is not guaranteed. Should any installation achieve such a significant savings in energy that the investment would have been a priority item without the credit, the credit is proportionately reduced. On the other hand, if the energy savings are disproportionately small in relation to the amount of the investment, then the amount of tax credit which can be taken is restricted or does not qualify.

I recognize that the 20-percent credit provided by the bill as drafted may well be too rich for the Government's power right now. Under free market forces business has already made the easy investments in energy conservation, the so-called first tier investment.

The second tier investments are, of course, more expensive. On business drawing boards across the country are plans for new, more efficient plants and equipment to replace those which presently exist, and certainly most of those investments will be made at some point. S. 750 is designed to get those plans into production sooner rather than later. We must use the present energy respite to assure that the inevitable supply disruptions of the future are of minimal consequence to the American economy.

Energy policy is not, cannot simply be a function of natural resource development alone. We must make every effort to seek and to implement a sound, well-balanced approach which exploits the full potential of American ingenuity as well as its resources.

It is my sincere hope that the administration will join us in developing such a program.

Now, is Mr. Glickman around?

[No response.]

Senator WALLOP. We will go straight, then, to the first panel, which consists of Linda Parke Gallagher, executive director, and Dr. Marc Ross, consultant to the alliance, representing the Alliance To Save Energy, Washington, D.C.; William U. Chandler, Washington representative, Environmental Policy Center, Washington, D.C.; and Jack Zukerman, president, CSL Energy Controls, Los Angeles, Calif.

If you would, please, step forward.

Senator Grassley, did you have an opening statement?

Senator GRASSLEY. No.

Senator WALLOP. Director Gallagher, will you please begin?

STATEMENT OF MS. LINDA PARKE GALLAGHER, EXECUTIVE DIRECTOR, AND DR. MARC ROSS, CONSULTANT TO THE ALLIANCE, REPRESENTING THE ALLIANCE TO SAVE ENERGY, WASHINGTON, D.C.

Ms. GALLAGHER. Thank you very much, Senator Wallop. We appreciate the opportunity to be here today and to testify on S. 750. I would like to summarize my prepared remarks and request that they be inserted in the record.

As you know, the Alliance To Save Energy is a coalition of business, labor, consumer, and environmental organizations found-ed by Senator Charles Percy and cochaired by Senator Alan Cranston.

One of our main projects has been a study of industrial tax incentives, funded by the MacArthur Foundation.

As the committee knows and as you have discussed in your opening remarks, there are two main reasons why the opponents of targeted tax credits for energy efficiency are suggesting that they are no longer needed. The first is that, because of the capital cost recovery provisions, legislation recently passed, the 10-5-3, the capital incentives for business to invest in energy efficiency improvements already exist. Second, targeted tax incentives reward investment behavior that would have been undertaken anyway, even without these incentives. I will address myself to the first point, and my colleague, Dr. Marc Ross, who is seated on my right, will address the second point.

The accelerated cost recovery provisions will not in any way particularly stimulate investments in energy efficiency. And I would like to make four points concerning this.

The first is that, because of the severe capital shortage within industry currently, the moneys will have to compete—the additional capital will have to compete—for a wide range of investments in equipment, in new plants. Energy efficiency has received no special priority in this legislation. And for all the reasons why energy efficiency has not been regarded as a high priority in the Nation, for these same reasons it will not get any special treatment within a firm.

Second, 10-5-3 does not address itself to the national security issues, which, again, Senator Wallop pointed out in his opening statement, and which Professors Stobaugh and Yergin have addressed in Energy Future. This security premium or benefit ranges from perhaps $10 to $100 per barrel of oil.

The third reason is that 10-5-3 will only allow companies to recover part of the replacement cost of equipment and plant. It is designed to take care of a lack of productivity investment which is resulting from the severe inflation that the country has experienced. So, again, there is no special subsidy for business implied in 10-5-3. And, again, it does not help energy conservation, per se.

The fourth and last point which I would like to make is that 10-5-3 does not address itself to the replacement cost of either electricity or natural gas, which are today undervalued because of pervasive Federal and State regulation. So industry is really underinvesting in energy efficiency based on false price signals, distorted price signals, which it is receiving due to these pervasive controls.

So for these four reasons the alliance believes that targeted tax incentives are needed in addition to the 10-5-3 legislation that was recently passed.

Now I would like to turn to Dr. Marc Ross to discuss the second point.

Senator **Wallop**. Thank you.

[The prepared statement follows:]

STATEMENT OF

Linda P. Gallagher and Dr. Marc Ross
of the
Alliance to Save Energy
before the
Senate Subcommittee on Energy and Agricultural Taxation

Good morning. My name is Linda P. Gallagher, I am the Executive Director of the Alliance to Save Energy, a national non-profit organization dedicated to promoting energy efficiency and conservation. With me is Dr. Marc Ross, Professor of Physics and an Energy Analyst from the University of Michigan, who is participating in one of the major studies concerning energy efficiency that the Alliance is undertaking.

The Alliance is composed of representatives of the business community, government, labor and the environmental and consumer movements. Senators Charles Percy and Alan Cranston head our organization. Through public advocacy, research, and demonstration projects, the Alliance promotes energy conservation and efficiency as the most cost-effective method for the United States to increase our energy supplies.

We very much appreciate the opportunity to appear before you today to testify on S. 750 and its provisions for tax incentives for energy efficiency and conservation. The Alliance recognizes the major impact the tax code has on energy supply and usage. We believe that, in the short term, tax incentives for energy efficiency and conservation can assist in implementing an overall energy policy designed to meet our energy needs at least cost.

To analyze the impact of business energy tax credits, the Alliance has undertaken a major study which is being funded by the John D. and Catherine C. MacArthur Foundation. The objective of the study is to obtain detailed information about the amount and timing of investments in energy efficiency, the energy saved by these investments, and the revenue impact on the Federal Treasury from differing policy and tax incentives for the industrial sector. Our study is not yet complete, but we can offer some preliminary observations about the utility of energy-efficiency tax incentives.

Two of the main concerns of those who oppose tax incentives for energy efficiency investments are that special incentives (1) are no longer needed because of the enactment of the new accelerated capital cost recovery provisions (10-5-3), and (2) give a "windfall" to corporations because these investments would have been undertaken even without the tax incentive. We question some of the assumptions behind these concerns.

The accelerated depreciation provisions will assist corporations to cope with a severe capital shortage. However, these provisions apply uniformly to all categories of investment. Efficiency related investments receive no advantage compared with investments in new capacity or other potential projects being considered by the corporation. The myriad of reasons that cause energy efficiency investments to receive low priority remain unaltered by accelerated cost recovery. Projects to rebuild deteriorating facilities, to provide new products, or to meet mandated environmental, safety and labor requirements will consume most of the increased capital made available by accelerated cost recovery.

Further, 10-5-3, because it treats all capital investments of a particular class (e.g. "equipment") equally, does not take account of the additional national security benefits offered by investments in energy efficiency. As the Committee knows, a number of prominent national energy policy studies, including the widely acclaimed Energy Future, have estimated that the "security premium" which the nation should be willing to pay to reduce oil imports ranges from $10-$100/barrel.

Accelerated cost recovery was enacted, in part, to address the problems corporations faced in coping with rapid inflation. Without 10-5-3 the cost of replacement of equipment or other property would be significantly in excess of the depreciation expense that had been taken. Accelerated cost recovery enables corporations to recover their capital within a reasonable period of time in order to reflect the true replacement cost of equipment. As such, it gives no special subsidy to business, and certainly does not help energy conservation investments *per se*.

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One final rationale to provide additional tax incentives for conservation investment above and beyond 10-5-3 is the fact that for at least natural gas and electricity, current energy prices do not fully reflect replacement costs. Since the price signals which energy users are receiving for these two fuels do not fully reflect the true value of energy savings which can be realized as a result of energy conservation investments, these investments are not undertaken to the optimum degree.

For example, although new natural gas will be fully decontrolled in 1985 under the NGPA, "old" natural gas will remain under controls indefinitely, unless Congress takes further actions. Because pipelines "roll in" the higher cost of new gas supplies with relatively low cost supplies from old wells, it means that energy users pay only average prices for gas, not prices which reflect the future replacement cost of gas. Precisely the same situation exists with electricity. Old power plants which were built before the rapid escalation in electric utility construction costs can typically deliver electricity at 1/3 to 1/2 of the cost of electricity generated from new plants. Once again, because State Public Utility Commissions roll in or average the cost of the electricity generated from both old and new plants, the average electricity user does not have to pay the full replacement cost of electricity and is not likely to pay that cost for some time. The result of this is that, without additional tax incentives to encourage conservation investment, the full value of energy conservation or efficiency investments is not signaled by current prices to energy users.

A second frequently voiced criticism of special tax incentives for energy efficiency investments is that most corporations are receiving a "windfall" because they would undertake energy efficiency improvement investments in the absence of the tax incentives. In other words, it is argued that the existing incentives, and obviously any additional incentives, simply reward behavior which would have taken place in any event.

While there is no question that a certain amount of energy conservation investment has taken place and will continue to take place in the absence of energy conservation tax incentives, there is a substantial amount of even short payback energy conservation investment which can be influenced by the availability of additional energy tax credits. As indicated earlier, the capital shortage is so severe in most corporations that the amount of capital available for even very attractive energy conservation investment projects is extremely limited. Based on the limited interviews we have conducted so far, we can report that energy conservation investments with even a one or two year simple payback are still awaiting funding at a number of major corporations.

To an outside observer who is not familiar with the severity of the corporate capital shortage, it may make little sense to reward such short payback investments with an additional energy tax credit. However, the fact is that even the short payback energy conservation investments are competing with other forms of investment within the corporation for the limited pool of discretionary capital which remains after investments to comply with EPA and OSHA regulations and other investments needed to maintain existing plant and equipment are made. In this setting a tax incentive for energy efficiency may be able to raise the rate of return on such projects sufficiently to give them an edge over other competing capital projects. In close cases, we believe it can make the difference as to whether an energy conservation project moves ahead of another competing capital project.

A second way in which energy tax incentives can affect investment in energy is by generating additional cash flow which is generally leveraged through a corporation's willingness to take on additional debt. The added capital provided by the tax incentive, as well as the increased debt, may, at least in part, be reinvested in additional energy conservation projects.

Finally, the availability of the tax incentive can focus the attention of corporate executives on energy conservation projects, leading to such developments as the establishment of a special fund for energy conservation projects and the acceleration of major projects in order to qualify for an incentive before a deadline built into legislation expires.

I want to emphasize that we are not now in a position to quantify the impact of any of these factors. We are trying to measure each of these effects as part of the MacArthur project, but do not expect to have the final results available until late winter or early spring. Naturally, we will provide these results to the Committee as soon as possible. To quantify at this time the precise degree to which such credits have moved investments forward is beyond the current state of our project. We are, however, able to make some general observations regarding the existing and proposed legislation.

A relatively small part of the potential investments which would improve a manufacturer's energy efficiency qualify for the existing energy tax credits. The current list of qualified energy property is too short and somewhat arbitrary. At one of the steel companies we visited, less than 10% of the available energy-efficiency improvement investments qualify for the current tax credit. The proposal in S. 750 to expand the list, as well as have a category for "qualified industrial energy efficiency" property, would increase energy efficiency related investment. The latter category encourages new design processes and other energy-efficiency improvement projects which cannot now be defined by specific inclusion on a list.

However, the difficulty of determining if property is "qualified industrial energy efficiency property" may inhibit some attractive energy-efficiency investments from being made. Such detailed provisions may not be effectively communicated to potentially important decision-makers in the company. Moreover, such complexity gives rise to uncertainty which becomes an important impediment to the investment of scarce capital.

An important element of S. 750 is that it encourages investment in projects which improve general productivity at the same time that significant energy savings are achieved. We have observed that equipment such as continuous casters for steel which achieve multiple productivity related objectives may be as important to improving energy efficiency within a plant as a project which is designed exclusively to increase energy efficiency.

We recommend that the minimum $10 Barrel of Oil Equivalent (BOE) floor proposed in S. 750 to qualify for the full tax credit be carefully reviewed. At many of the plants we have visited, there are potential projects in the plant that would realize significant energy savings at less than a $10 BOE cost. Investment in these projects, however, is not proceeding because of significant capital shortages. The assumption that industry will undertake these projects, even without a full tax credit, appears false. As we have stated, a tax credit may be the determining factor in deciding if these energy-efficiency related investments are undertaken.

Finally, it is important to recognize there is an attribute of a tax incentive targeted at energy efficiency or conservation that is unlike most other tax incentives. Conservation incentives are aimed at productivity, helping manufacturers to reduce costs per unit of output. Productivity improvement is essential to the well-being of industry and of the American economy.

Indeed, such productivity improvements will be reflected in an increase in Federal revenues. Since energy expenditures are deductible from corporate income as an "ordinary and necessary" business expense, a reduction in these expenses, other things being equal, will cause corporate income, and consequently corporate taxes, to increase. One of the analyses we are performing as part of the MacArthur study will evaluate whether the net effect to the Federal treasury from a tax credit for energy-efficiency investments is an increase or decrease in revenues.

These general observations about tax incentives and energy savings in industry are based upon our preliminary impressions from the MacArthur Industrial Incentive Study, and an analysis of tax incentives generally in the energy field. We hope to have preliminary results of the study completed early this spring to help the Congress and other policymakers as they consider an extension or modification of the business energy tax credits which expire on December 31, 1982.

Due to the interest expressed by Committee members in our study, I believe it may be useful to review the methodology we have employed. The study is focused on the industrial sectors of the economy which consume the greatest amount of energy -- chemicals, steel, aluminum, pulp and paper and petroleum refining. These industries account for greater than 60% of all energy used in manufacturing or approximately 20% of total energy use in the U.S.. We are now obtaining detailed information from several corporations within each industrial "category" about investment opportunities which save energy and the effect of tax incentives on decisions about these investments. We make visits to each corporate headquarters and, in some cases, to plants to conduct detailed interviews. We interview facilities planners, tax experts, energy managers, engineers and investment decision-makers.

Our first step in a visit is to obtain the inventory of energy conservation - related investment projects that are underway, planned, or being considered. We analyze in detail a small number of projects which are attractive to the corporation but for which a decision to go ahead has not been made. For these selected projects, the effect of existing and proposed tax incentives on the return on investment is examined. Issues directly related to tax incentives, such as the importance of receiving tax credits during the construction of the project, refundability, the complexity of complying with the law, and the effect of uncertainty about the applicability of tax incentives, are explored.

Other factors which affect the decision-maker's evaluation of each project are also considered. These would include, for example, the relation of the proposed project to corporate strategic plans or additional requirements for engineering manpower in the project's design and construction.

The information obtained by us from a specific company and our analysis of that company will be kept strictly confidential. However, the information will be used and released in the form of aggregated results which we will extrapolate to determine the effect of tax incentives on each industrial "category" we have studied.

Our analysis will include calculating for various levels of tax incentives the amounts and timing of investments in energy efficiency that would be undertaken, the amount of energy that would be saved by the investments, and the overall effect on Federal revenues. The results of this study should significantly assist in the design of a tax code that provides the necessary incentive to insure that energy efficiency plays an appropriate role in national energy policy. I hope our preliminary observations have been helpful to the Committee. We would be glad to answer any questions you might have.

STATEMENT OF DR. MARC ROSS, CONSULTANT TO THE ALLIANCE TO SAVE ENERGY, WASHINGTON, D.C.

Dr. Ross. Mr. Chairman, in the MacArthur industrial incentive study we of the alliance are visiting energy-intensive manufacturers and interviewing people in depth about their energy-conservation investments. And, although we don't have real results as yet, I would like to give you some preliminary observations.

Perhaps the most surprising finding is that, while high-return investments which conserve energy are being made, many high-return investments which are very attractive are not being made. These are investments which in some cases fall below the $10 floor in S. 750. They are investments, in many cases, which have a simple pay-back of just 1 to 2 years.

Now it seems that these attractive investments are being delayed because of capital shortages among these energy-intensive manufacturers and the tremendous competition for capital which occurs within each firm, among mandatory projects, new acquisitions, new products and maintenance kinds of projects.

It is too early in our study to provide quantitative results, but we have observed examples where incentives might really be helpful. One is that among discretionary capital projects energy conservation projects would be given a competitive edge. And we have seen examples where that would be the case.

Furthermore, we have observed that the existing incentives have increased cashflow, which has been leveraged by increased debt, and is being reinvested in part in conservation projects. Now the existing incentive, by the way, doesn't apply to very much of what the corporations need to do; so I am not expressing enthusiasm about it, as such.

Third, we have observed that the attention of top corporate executives is a very important factor in decisionmaking. We have seen examples of funds dedicated to conservation investments, and we have discussed the very real possibility that for major projects a decision to go ahead early might well be made in order to gain a tax credit before the legislative deadline. And that, in my mind, is one of the most important advantages.

Perhaps I could say a few more words about the study. We are visiting about 15 firms both at headquarters and in some cases in the plants. We are interviewing engineers, planners, decisionmakers, energy people, and tax lawyers. We are finding out about their inventory of projects, which projects are going forward, which aren't, what is there in the decisionmaking process that leads to those decisions, and what would the effect be of a variety of tax incentives.

The study would involve an evaluation of the cost to the Treasury of the incentives, but it would also involve an evaluation of the gains in tax revenue which should arise because the incentive is a direct encouragement of productivity improvement. Unlike most tax incentives, it is aimed at reducing cost per unit of production.

We should have our report by late winter, early spring, and we will be communicating it to you as soon as it is available.

Thank you.

Senator Wallop. Thank you very much, Dr. Ross.

Senator Wallop. Bill Chandler.

STATEMENT OF WILLIAM U. CHANDLER, WASHINGTON REPRESENTATIVE, ENVIRONMENTAL POLICY CENTER, WASHINGTON, D.C.

Mr. CHANDLER. Thank you, Senator Wallop.

The Environmental Policy Center strongly supports the Industrial Energy Security Tax Incentives Act, S. 750. The act combines the cost effectiveness of energy conservation with the fiscal efficiency of the investment tax credit. S. 750 would reduce a basic bias in the tax code that encourages energy waste. It would save money for industry, reduce stress on the environment, enhance national security, and yet it would cost the Treasury very little in lost revenues. The act would, if I may borrow a phrase from the military, give us a great deal of "bang for the buck."

The phrase "bang for the buck" describes how much firepower you can buy for your money. Economists have applied this term to compare the effectiveness of fiscal incentives, fiscal policy tools. The investment tax credit, as I show in my written testimony, will generate far more incremental investment per dollar of Treasury revenue lost than would either accelerated depreciation or a cut in the corporate tax rate. The effectiveness of tax credits can be even greater, in my opinion, when targeted to initiate energy conservation.

Why would targeted tax credits for conservation work better than general investment incentives? There are at least two reasons: First, credits would provide the cash flow for firms to make investments that have very favorable returns. Second, the tax credits would actually reduce revenue losses that normally result from tax deductions for energy expenses. The second point is vital, I think, for it shows that conservation not only can produce economic efficiency, environmental protection and national security but can, to a large degree, pay for themselves. It also underscores the bias in the tax code for energy waste: The Government makes energy consumption cheaper by permitting a deduction of energy expenses.

A brief example from my testimony will illustrate how conservation tax credits could save the Treasury money. From table I we see that industrial evaporators can be upgraded to save energy at an average cost of about $2 per million Btu's. If a firm uses residual oil, it pays two and a half times this amount, or about $5 per million Btu's. The Treasury, since it permits expensing of energy cost, loses, then, $2.30 per million Btu in reduced tax liability.

If a tax credit equal to the entire cost of the conservation investment were provided, the Treasury would still save 30 cents per million Btu's. If the firm used No. 2 oil instead of resid, Treasury would save $2.60 per million Btu's. The potential is very large, since about one-fourth of the energy used in evaporation can be saved at the above cost and since similar opportunities exist in other industrial-unit processes.

Over the last year I have heard three or four objections to the concept of conservation tax credits. These relate to whether credits should be given for investments that already make sense, or to whether targeted incentives distort the market, or, more commonly, to whether the Treasury can afford these incentives. I believe each of these objections is based on gross over-simplifications of the problem.

First, as I believe you understand well, Mr. Chairman, these attractive investments are being delayed because of a lack of capital. When money is tight, managers rationally choose market-share investments over cost-savings investments. The former are ephemeral, while the latter are less likely to slip away. And, as one expert put it, the name of the game is cash flow. Even an attractive investment must be postponed if it will place too great a strain on the firm's checking account, so to speak.

Second, some analysts believe that more conservation would be stimulated by providing general incentives that would lead to the scrapping and replacement of existing industry. To retrofit, they believe, would be counterproductive. I would simply point out, however, that, even with the very generous 10-5-3 bill just passed, half of industry's existing plant and equipment will still be in use by the year 2000, and we predict that half of this would not be retrofit without further incentives. Moreover, the big winners in the 10-5-3 legislation were electric utilities and oil refiners, and, thus, the disparity between conservation and production is only further increased.

Third, the argument that the Treasury cannot afford these incentives is a bit convoluted. As I have shown, credits would mostly pay for themselves. But the argument goes beyond this to imply that more conservation investment would be stimulated by bringing down the cost of borrowing money. This means, then, forgoing the tax credits and balancing the budget. Balancing the budget is urgent, but it seems to me that it would be better to let industry keep the money that it has already earned than to tax it away in order to make it easier to borrow.

Let me conclude with two comments, if I may. First, we are not seeking a handout for some theoretical concept; we are simply seeking tax parity, more nearly equal treatment for energy conservation and energy consumption. Given the bias in the tax code for consumption and all the nontaxed subsidies for centrals and nuclear power, we have a very long way to go.

Finally, the word security appearing in the title of this bill is most appropriate, for energy conservation can buy us an independence and security that no weapon can. And that is part of what I mean when I say that this bill would give us a great deal of "bang for the buck."

Senator WALLOP. Thank you very much, sir.

Statement In Support Of S.750
The Industrial Energy Security Tax Incentives Act

by
William U. Chandler
Environmental Policy Center

1. Introduction

The Environmental Policy Center strongly supports the Industrial Energy Security Tax Incentives Act, S.750. The Act combines the cost-effectiveness of energy conservation with the fiscal efficiency of the investment tax credit. It would reduce the bias in the tax code that encourages energy waste. S.750 would save industry money, reduce environmental damage, buy international security, and yet cost the Treasury little in lost revenue. The Act would, to borrow a phrase from the military, give us our best "bang for the buck".

This testimony shows why industrial energy conservation tax credits would bring these benefits to the country. We describe the low cost of energy conservation, the effectiveness of tax credits for spurring investment, the justification for targeted incentives, and how the cost to the Treasury could be quite low.

2. The Cost of Energy Saved

The cost of capital investments for saving energy is relatively inexpensive. Industrial evaporators, for example, can be upgraded to save energy at an average cost of only $2 per million BTU. Residual fuel, in comparison, costs more than twice as much, or about $5 per million BTU. Up to one-third of the energy used in evaporation could be saved at the low cost cited above. Many such opportunities exist in industry, as Table 1 indicates. The short-term energy conservation potential from upgrading evaporators, distillation columns, insulating steam lines, using preheating in furnaces, and replacing inefficient electric motors alone could save over 600,000 barrels of oil equivalent per day.[1]

3. Bang-For-The-Buck

The investment tax credit, according to many analysts, provides the most incremental investment per dollar of Treasury revenue foregone of any fiscal policy tool. Cutting the corporate tax rate generates only about $.34 per dollar of revenue "lost".[2] Ten-5-3, as passed in the Economic Recovery Tax Act, will provide about $.50 worth of additional investment per dollar of revenue lost.[3] In contrast, the Investment Tax Credit can generate $.75 to $1 per dollar of revenue lost.[4,5] When investment credits are applied to very cost-effective projects such as conservation investments, "bang-for-the-buck" is very favorable. (See Table 2.)

4. Conservation Credits Would Reduce "Tax Expenditures" For Energy Consumption

The tax code currently favors energy consumption. Energy consumption thus reduces Treasury revenues. To the extent that conservation credits would reduce energy consumption, they would also reduce revenue losses. Thus, to some degree, conservation credits would pay for themselves.

Energy consumption may be immediately expensed; that is, energy costs are deducted from corporate tax liability as a cost of doing business. Since the corporate tax rate at the margin is 46 %, the "subsidy" for energy waste amounts to almost half the cost of energy. Conservation, which is accomplished primarily with capital investment, is thus disadvantaged since capital must be depreciated over time. Even with the generous changes in depreciation allowances in the Economic Recovery Tax Act, this disadvantage persists. In fact, energy production and conversion industries were the big winners in the recent tax act, as Table 3 suggests. This Act merely increases the disparity between energy conservation and energy consumption.

S.750 would serve to reduce this disparity, and at a low cost. Consider the following example. If we assume that Jorgenson is right and that the ITC will generate one dollar of investment per dollar of revenue lost, then we can see how the credit would reduce "tax expenditures" for energy consumption. The government would buy, for example, conservation in industrial evaporation at a cost of $2 per million BTU, and this would save the industry $5 per million BTU in residual oil costs. It would also save the government $2.30 in tax deductions, and would therefore increase revenues by $.30. If the fuel saved were No. 2 heating oil which costs $10 per million BTU, then the savings to the Treasury would total $2.60.

Expensing energy consumption costs is, by no means, the only element of the tax code that promotes energy waste. Intangible drilling costs are expensed at an annual cost to the treasury of more than $1 billion. Non-tax subsidies for nuclear power and synthetic fuels, despite the fact that these systems produce energy at costs of more than $15 per million BTU, add billions of dollars to the burden of taxpayers each year. [6]

The simple benefit/cost calculation above ignores important external costs. These include the fact that we will export more than $60 billion this year to pay for our imported oil; that if we must resort to oil shale for energy we will have to dispose of two tons of rubble for every barrel of oil produced, and will consume 5 barrels of water per barrel of oil; and that we are going to spend perhaps $100 billion on a Rapid Deployment Force to "protect" the oilfields in the Mid-East, dispite the high probability that such a force could not accomplish its mission.

Yet, some critics still do not appreciate the need for S.750. They object that Congress should not subsidize cost-effective investments. They believe that the market will accomplish the task; or else they are concerned primarily to balance the U.S. budget. But as we shall see, these objections are all based on serious over-simplifications of the problem.

5. Why Targeted Incentives Are Necessary

"The name of the game is cash flow", as one financial expert put it.[7] Industrial managers have great difficulty financing conservation investments during periods of "tight money". During such periods, and often in more normal times, it is rational to make an investment that increases market share before one makes a cost-savings investment. The former is ephemeral, the latter less likely to slip away. Management simply cannot make an investment that will place too great a strain on the firm's "checking account", as it were, even if the investment will pay off handsomely within a few years.

Other serious constraints which S.750 would help overcome include: distorted energy price signals; imperfect market information; regulatory constraints; and, of course, biased federal incentives.

Some, however, argue that 'targeted' incentives are counterproductive, that it is better to provide 'general' incentives such as "10-5-3" and let the market determine the most efficient use of capital. This argument maintains that more energy would be saved by scrapping and replacing existing industrial equipment, and that incentives for retrofitting equipment will do more harm than good. Two facts are overlooked in this argument, however. The first is that it is very likely that half of all existing industrial plant and equipment will still be in use in the year 2000.[8] This equipment badly needs to be retrofit today. Secondly, S.750 would serve only to offset some of the incentives for energy waste.

More importantly, the word "security" in the bill's title suggests an overriding concern. For energy conservation can buy us an independence and security that no weapon can. And that is part of what we mean when we say that S.750 would give us a great deal of "bang-for-the-buck".

6. Summary

In conclusion, let us reiterate our belief that "The Industrial Energy Security Tax Incentives Act" is a carefully crafted, intelligent piece of legislation. It would contribute substantially to our national well-being. We continue to enthusiastically support S.750, and maintain our optimism that with innovative federal policies such as this we in the United States can meet the challenge of future energy demand.

TABLE 1: THE COST OF TYPICAL INDUSTRIAL ENERGY CONSERVATION RETROFITS

Investment	Cost per million Btu of Energy Saved (1978)	Short-Term Energy Savings Potential**
1. Evaporators (upgrading)	\$1.00 to 3.00	.05
2. Distillation (upgrading)	3.70	.3
3. Insulation (23 inches)	1.30	.4
4. Direct Heating (Preheating)	3.00	.6
5. Mechanical Drive (Replacement of Electric Motors)	10.00*	.01
		Total = 1.3 (≃ 600,000 barrels of oil equivalent per day)

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* Compared with marginal electricity supplied @ \$15.00/MMBTU

** From these five categories of investments, alone.

Source: Reference 1

TABLE 2: ESTIMATES OF THE EFFECTIVESS OF FEDERAL INCENTIVES FOR STIMULATING INDUSTRIAL ENERGY CONSERVATION

POLICY	INVESTMENT PER DOLLAR OF INCENTIVE ($ 1980)
Fiscal Policies	
1. Investment Tax Credit	$ .68 to $1.00
2. Corporate Tax Rate Reduction	.34
3. "10-5-3" Depreciation Schedule	.53

Source: References 2,3,4, and 5

Table 3

Table B.1.—Industry Tax Change Under the Accelerated Cost Recovery System (H.R. 2400)[1]

a. Total Tax Change

Calendar Years (millions of dollars)

Industry	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Agriculture	−373	−980	−1,541	−2,070	−2,602	−2,959	−3,298	−3,575	−3,847	−4,382
Mining	−175	−417	−765	−1,211	−1,680	−2,009	−2,225	−2,393	−2,265	−2,547
Construction	−507	−912	−1,274	−1,436	−1,385	−1,354	−1,388	−1,483	−1,677	−1,988
Grain products	−35	−78	−137	−201	−284	−366	−432	−476	−496	−493
Sugar products	−10	−22	−38	−55	−77	−98	−113	−122	−124	−121
Vegetable oil	−10	−22	−37	−52	−73	−92	−107	−117	−121	−120
Prepared food	−90	−190	−345	−516	−750	−978	−1,169	−1,291	−1,346	−1,339
Tobacco	−9	−23	−43	−64	−91	−116	−136	−148	−151	−144
Knitted goods	−9	−21	−33	−43	−53	−60	−65	−74	−84	−95
Yarn, thread, woven fabrics	−11	−33	−62	−103	−165	−223	−268	−293	−296	−281
Carpets, dyeing	−6	−16	−31	−46	−61	−68	−72	−74	−85	−96
Textured yarns	−4	−8	−13	−16	−19	−21	−23	−26	−29	−33
Nonwoven fabrics	−2	−4	−7	−9	−13	−16	−19	−20	−21	−24
Apparel	−25	−66	−121	−171	−215	−237	−252	−268	−316	−365
Logging	−22	−47	−67	−76	−80	−77	−80	−89	−102	−115
Sawmills	−24	−54	−86	−114	−142	−162	−182	−197	−206	−230
Wood products and furniture	−35	−82	−137	−192	−245	−289	−333	−369	−397	−448
Pulp and paper	−89	−248	−424	−624	−899	−1,170	−1,354	−1,428	−1,382	−1,252
Converted paper	−38	−85	−137	−188	−247	−294	−330	−346	−344	−385
Printing and publishing	−78	−186	−324	−458	−634	−779	−895	−971	−999	−998
Chemicals	−258	−750	−1,402	−1,989	−2,438	−2,666	−2,740	−2,597	−2,915	−3,250
Petroleum refining	−471	−1,115	−1,643	−2,164	−2,832	−3,453	−3,943	−4,246	−4,317	−4,166
Oil and gas production	−253	−655	−1,223	−1,812	−2,539	−3,211	−3,750	−4,099	−4,200	−3,961
Petroleum marketing	−25	−70	−143	−218	−298	−372	−440	−496	−569	−637
Oil and gas drilling	−46	−112	−178	−226	−261	−263	−267	−282	−314	−347
Rubber	−13	−33	−57	−80	−104	−125	−146	−165	−180	−188
Plastic	−25	−66	−138	−215	−313	−393	−462	−518	−559	−578
Leather	−7	−14	−22	−29	−39	−48	−56	−64	−71	−76
Glass	−30	−68	−112	−156	−210	−257	−298	−329	−346	−348
Cement	−11	−28	−48	−70	−96	−121	−142	−159	−169	−172
Stone and clay	−44	−108	−184	−262	−355	−453	−539	−603	−639	−647
Ferrous metal	−38	−117	−216	−337	−479	−611	−712	−773	−786	−742
Nonferrous metal	−19	−58	−113	−170	−229	−290	−339	−370	−388	−397
Fabricated metal	−89	−144	−269	−397	−559	−693	−818	−926	−1,016	−1,084
Machinery	−208	−559	−1,089	−1,733	−2,457	−2,976	−3,380	−3,632	−3,762	−4,272
Electronics	−59	−148	−249	−327	−381	−390	−411	−459	−533	−613
Motor vehicle production	−105	−5	−340	−893	−1,568	−2,023	−2,293	−2,434	−2,426	−2,226
Aerospace	−34	−92	−166	−259	−338	−378	−407	−422	−432	−454
Shipbuilding	−13	−33	−58	−87	−126	−164	−196	−221	−235	−242
Locomotives and railroad cars	−2	−4	−8	−13	−19	−25	−30	−32	−32	−31
Railroad transportation	−47	−152	−332	−549	−811	−1,044	−1,203	−1,268	−1,219	−1,078
Land passenger transportation	−54	−93	−137	−141	−164	−181	−196	−214	−239	−265
Land freight transportation	−117	−214	−352	−426	−434	−445	−483	−553	−634	−709
Water transportation	−34	−143	−282	−442	−638	−824	−959	−1,064	−1,100	−1,044
Airlines	−55	−131	−384	−739	−1,228	−1,691	−1,998	−2,108	−1,980	−1,591
Oil and gas pipelines	−29	−88	−237	−502	−831	−1,147	−1,419	−1,639	−1,803	−1,906
Telecommunications	−90	−226	−1,115	−2,533	−4,001	−5,127	−5,968	−6,523	−6,798	−7,580
Radio and TV	−18	−45	−69	−85	−92	−81	−71	−71	−82	−94
Cable TV	−6	−17	−33	−54	−74	−83	−83	−74	−60	−67
Electric utilities	−603	−1,966	−2,977	−3,752	−4,838	−6,072	−7,407	−8,737	−9,954	−11,099
Gas utilities	−117	−480	−803	−1,073	−1,436	−1,846	−2,279	−2,708	−3,102	−3,453
Trade	−740	−1,488	−2,123	−2,393	−2,776	−3,192	−3,735	−4,328	−4,945	−5,636
Amusements	−56	−189	−305	−371	−455	−523	−585	−629	−652	−662
Finance, insurance and real estate	−84	−250	−461	−702	−978	−1,297	−1,651	−2,025	−2,431	−2,893
Personal and professional services	−168	−501	−840	−1,077	−1,322	−1,521	−1,764	−1,879	−2,145	−2,457
Industry total[1]	−5,547	−13,654	−23,731	−33,913	−45,434	−55,354	−63,864	−70,318	[illegible]	[illegible]
Grand total[2]	−5,804	−14,961	−25,192	−35,086	−46,178	−55,767	−64,162	−70,730	−76,108	−81,872

Source: Reference 8

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Senator **Wallop**. Mr. Zukerman.

STATEMENT OF JACK ZUKERMAN, PRESIDENT, CSL ENERGY CONTROLS, LOS ANGELES, CALIF.

Mr. **Zukerman**. Good morning. My name is Jack Zukerman. I am the chief executive officer of the CSL companies, a California group of companies which is engaged in the manufacture of lighting equipment and automatic energy control systems. Our company was established in the mid-1950's and has recently become actively involved in a new field called energy construction management. At the present time our manufacturing division has shipped over 8,000 automatic energy control systems throughout the world. Our new division of energy construction management has developed energy conservation plans for facilities at over 100 locations this past year, and our clients number among some of the Fortune 500.

We appreciate the opportunity to testify on S. 750, and we have followed this legislation with great interest. We feel that it represents a major step forward. But, because of the limited time the committee is available this morning, we intend to submit more detailed particulars with regard to this in our written testimony. But with the committee's permission, I would like to discuss this morning the new category of eligible property as it relates to the accurate measurement of the energy-efficient property.

The current list of property eligible for the credit is very restricted and, as the committee knows, the Treasury Department has been reluctant to utilize its discretionary authority to add additional items to the statutory list. The result has been that, in some industries, only a small percentage of the energy conservation opportunities actually qualify for the existing credit. Although the list contained in S. 750 is an important step forward, we agree with you, Senator, and the other cosponsors of the legislation, that the addition of qualified industrial energy efficiency property is critical if industry is to be encouraged to implement the full lanes of available energy conservation options.

Although the accurate predictions and measurements of energy savings is not a simple task, I am going to confine our testimony this morning strictly to the measurements. I would like to report to the committee that our company, after 2 years of development, has produced a computer-based, multiple linear regression model which in most cases is capable of predicting energy savings within a range of 1 to 2 percent of actual energy usage. This is rather important to us, because any new program that we have in the energy construction management division, our payments are based on actual energy savings, so we are talking about the real world.

What is a multiple linear regression model? It is nothing more than a mathematical model which predicts future energy usage based on past energy use, characteristic of a given facility. The model employs production data such as kilowatt hours, kilowatts, therms, operating hours, and everything else that goes into the profile of a facility. This model was generated using multiple regression equation techniques, and the results have correlated well with actual usage. At worst, we have been off by 5 percent. But, perhaps most important, this model allows us to adjust the baseline energy usage from which we compute energy savings to take account of the changes in production levels, weather, and other variables affecting energy usage.

As the committee recognizes, these factors must be considered in any reasonable estimate of energy savings which would be produced by investment in conservation equipment. It is, therefore, imperative for us to demonstrate accurately the amount of savings our clients would achieve. Our index of this confidence which our clients have in this is that they have agreed to dollar-based particulars in the contracts that we have existing with them.

In 1976 our company entered into an energy conservation program with midwestern division of Lucky Food stores. At the present time there are 108 stores in operation under this program, and to date we have saved $8,500,000 or translated into 350,000 barrels of oil.

To achieve these kinds of results we begin by conducting a thorough audit of energy conservation opportunities in a facility. After the opportunities are identified, we work with the client to isolate those production variables which are likely to affect energy savings in the targeted investment areas. Typically, we might start with 10 or 15 different variables which can affect energy usage. These include capacity, utilization, product mix, heating and cooling degree days, and in some cases the amount of solar gain. We then obtain information on each of these variables for the last 3 years. Tentative coefficients are assigned to each variable, and through a series of trial runs we are generally able to eliminate a number of variables which simply do not correlate with actual energy usage during the preceding 3 years. Typically, the final equation utilizes approximately five variables, certainly a manageable number. Perhaps most important, information on each of these variables is generally already available from either the plant, the facility, or the weather bureau.

In 90 percent of the cases no additional data gathering is necessary.

I see that my time is being rather cut short, so I will go into what we identify as the five pertinent issues that exist in this bill:

One, the ability to predict future energy savings, given uncertainties about future product mix and capacity utilization rates;

Two, the ability to show that less energy is actually being used per unit of output;

Three, the selection of a representative 1-year period for the purpose of establishing a baseline;

Four, the ability to separate energy savings achieved by qualified industrial energy efficiency property from those achieved by other energy conservation investments; and

Five, the ability to discount energy savings which are achieved as a result of a substantial change in the character of the input or output of the facility.

Although there may be other energy measurement issues associated with this legislation, we feel that these are the important ones. Based on our experience, I believe I can assure the committee that all of these issues can be successfully dealt with using the multiple linear regression program developed by our company. And we would make this complete program available to the committee.

To determine whether an investment in qualified industrial energy efficiency property would produce a minimum of a thousand barrels of oil equivalent in savings per year, it is essential that an energy user be able to predict these energy savings. We can do this with our method.

The ability to demonstrate reduced energy usage per unit of output, which is your second requirement of S. 750, can also be done, because the model can account for changes in both capacity utilization and product mix.

Three, the selection of a representative 1-year period for determining the energy baseline. Although we believe it is possible to identify a representative 1-year period for establishing this baseline, we feel that this requirement introduces the potential of conflict between the IRS and the energy user over the issue of whether the year selected was indeed representative. We feel that the 3-year baseline would be much better.

The fourth is the ability to separate savings from qualified industrial energy efficient equipment from savings generated by other types of equipments. Under this legislation an energy user must be capable of separating the energy savings which result from installation of property. This means, for example, that an energy user must be able to separate the savings from qualified industrial energy efficient property from those achieved by installation of a piece of specifically defined energy equipment which is listed in the statute. Of the five measurement problems I have outlined, this is probably the most difficult to overcome. However, I believe that our model can be modified in such a way as to segregate the energy saving from a particular piece of equipment if necessary. This would require significant additional work to isolate those production variables which affect specific pieces of equipment rather than the process in general. But I believe it can be done.

If this approach is not successful, it is always possible to install individual metering equipment where it is needed.

Last, but not least, is the ability to discount energy savings produced by a substantial change in the character of a facility's input or output. A closely related requirement under this legislation is that an energy user be capable of discounting energy savings which are produced by a substantial change to either the input or output of his production process. The example frequently cited by the Treasury Department, to illustrate this problem, is a change in an auto production line from producing small compact cars to large luxury autos. Once again, we faced this problem, and we feel that it can be overcome easily. We faced the issue ourselves in our own company with the Chrysler Corp., for example. We were asked what would happen if Chrysler suddenly switched from the production of automobiles to tanks, a product which certainly uses more energy per unit of output than any automobile. To accomplish such a change in product output we would simply add a new product variable to the model and, once again, estimate the precise energy requirements by fuel type to produce one type of that product. This new variable would then be incorporated in the multiple regression equation. The same procedure can be utilized to handle significant changes in product input.

In short, we do not believe that any of the measurement problems presented by the proposed legislation are inseparable. In fact, we have the capability to deal with virtually all of them at the present time. It requires significant effort on the part of the user and of the company doing it, but in our opinion they can all be accomplished.

Thank you.

Senator WALLOP. Thank you very much, sir.

[The prepared statement follows:]

STATEMENT OF MR. JACK J. ZUKERMAN,
CHIEF EXECUTIVE OFFICER
OF THE CSL COMPANIES
BEFORE THE SUBCOMMITTEE ON ENERGY
AND AGRICULTURAL TAXATION
OF THE
SENATE FINANCE COMMITTEE

October 19, 1981

Good Morning. My name is Jack Zukerman. I am the Chief Executive Officer of the CSL Companies, a California group of companies which is engaged in the manufacturing of lighting equipment and automatic energy control systems. CSL was established in the mid-1950s and has recently become actively involved in a new field of energy construction management. At the present, our manufacturing division has shipped over 8,000 automatic energy control systems throughout the world. Our new division of energy construction management has developed energy conservation plans for facilities at over 100 locations. Among our clients are Aerojet, a division of General Tire; Lear Siegler; American Bakeries Companies; and other companies of similar status.

We appreciate very much this opportunity to testify on S. 750, The Industrial Energy Security Tax Incentive Act of 1981. We have followed this legislation with great interest and feel that it represents a major step forward in expanding both the level and scope of the existing business energy tax credits. Because of the limited time which the Committee has available this morning, I intend to limit my oral remarks to issues surrounding the measurement of energy savings, particularly as they apply to investments in "qualified industrial energy efficiency property." With the Committee's permission, I intend to submit a longer written statement which will cover other issues related to the legislation.

As Senator Wallop and others have already pointed out, one of the principal benefits of S. 750 is the increased coverage of eligible investments offered by the addition of "qualified industrial energy efficiency property" to the existing statutory list of specially defined energy property. The importance of this addition cannot be overestimated. The current list of property eligible for the credit is very restricted, and as the Committee knows, the Treasury Department has been reluctant to utilize its discretionary authority to add additional items to the statutory list. The result has been that in some industries only a small percentage of the energy conservation investment opportunities actually qualify for the existing credit. Although the expanded statutory list contained in S. 750 is an important step forward, we agree with Senator Wallop and the other cosponsors of the legislation that the addition of qualified industrial energy efficiency property is critical if industry is to be encouraged to implement the full range of available energy conservation investment options.

While the addition of this new category of eligible property is very significant, it does raise a number of issues regarding the ability of energy users to accurately measure the expected energy savings from items of qualified industrial energy efficiency property. As the Committee knows, the Treasury Department has raised serious questions as to whether energy savings can be accurately measured. Naturally, the IRS is concerned whether objective standards are available to measure the actual energy savings achieved by certain types of energy conservation equipment.

Although accurate prediction and measurement of energy savings is not a simple task, I can report to you that CSL, after over two years of development, has produced a computer-based multiple linear regression model which, in most cases, is capable of predicting energy savings within a range of one to two percent of actual energy usage. At worst, we have been off by five percent. Perhaps most important, this model allows us to adjust the baseline energy usage from which we compute energy savings to take account of changes in production levels, weather, and other variables affecting energy usage. As the Committee recognizes, these factors must be considered in any reasonable estimate of energy savings which will be produced by investment in conservation equipment.

Accurate prediction of expected energy savings is particularly important to CSL and its industrial clients because our program is based on a return on investment formula. It was therefore imperative for us to demonstrate accurately the amount of savings our clients could achieve. We have developed various methods of determining these savings among which is our multiple linear regression model. One index of the confidence which our clients have in this model is their willingness to incorporate it as part of the contract and to rely on it for measuring actual energy savings under a range of production and weather conditions.

In 1976, CSL entered into an energy conservation program with the Midwest division of Lucky Food Stores. At the present time, there are over 108 automatic energy control systems in operation which since 1976 have saved $8.5 million worth of energy. If we assume an average price of $25 per barrel of oil equivalent during this period, this means that these systems have saved 340,000 barrels of oil equivalent.

To achieve these kinds of results, we begin by conducting a thorough audit of energy conservation opportunities in a client's facility. After the opportunities are identified, we work with the client to isolate those production variables which are likely to affect energy savings in the targeted investment areas. Typically, we might start with 10 or 15 different variables which can affect energy usage. These include capacity utilization, product mix, heating and cooling degree days, and in some cases, the amount of solar gain. We then obtain information on each of these variables for the last three years. Tentative coefficients are assigned to each variable, and through a series of trial runs, we are generally able to eliminate a number of variables which simply do not correlate with actual energy usage during the preceding three years. Typically, the final equation utilizes approximately five variables, certainly a manageable number. Perhaps most important, information on each of these variables is generally already available from either the plant or the Weather Service. In 90 percent of the cases, no additional data gathering is necessary.

Once the key variables have been selected, we do additional trial runs on the computer during which we alter the magnitude of the coefficient for each variable until we achieve a good "fit" between actual energy usage for the preceding three years and predicted energy usage under the model. As I indicated earlier, we have generally been able to predict energy usage within one to two percent of actual energy usage for the past three years. Our current average is 1.2 percent. I have appended to my written testimony a number of graphs showing the predicted versus actual energy usage in a number of the facilities which are owned by our clients.

To illustrate this procedure, it might be helpful if I review the approach we have used to estimate energy savings in a bakery. As the Committee recognizes, a bakery normally produces a number of different products, each of which consumes varying amounts of energy in its production. Naturally, the mix of these products changes depending on the time of the year and the relative demand for each of the products. To account for this, we estimate the amount of energy, by fuel type, for one unit of production of each product. For example, to produce one hot dog roll requires that a certain temperature be maintained in an oven for a set period of time. This is then translated into a fuel requirement for each roll. Once we know the energy requirements for each product, we can estimate the amount of energy that is used to produce a given quantity of that product, even if the quantity produced varies on a daily basis.

With this type of information, as well as weather data on the number of heating and cooling degree days, it is possible to predict energy consumption quite accurately even if the capacity utilization rate and the product mix of the bakery changes frequently.

With this background, I would now like to turn to some of the specific measurement issues presented by S. 750. After carefully reviewing the proposed legislation, we have identified five key problems which must be successfully addressed in order for the legislation to operate as planned. These are:

(1) The ability to predict future energy savings given uncertainties about future product mix and capacity utilization rates;

(2) The ability to show that less energy is actually being used per unit of output;

(3) The selection of a "representative" one-year period for the purpose of establishing a baseline;

(4) The ability to separate energy savings achieved by qualified industrial energy efficiency property from those achieved by other energy conservation investments; and

(5) The ability to discount energy savings which are achieved as a result of a substantial change in the character of the input or output of the facility.

Although there may be other energy measurement issues associated with the legislation, we feel that these are the important ones. Based on our experience, I believe I can assure Committee that all of these issues can be successfully dealt with using the multiple linear regression program developed by CSL. I will briefly review each one in turn.

Ability to Predict Energy Savings Given Future Changes in Capacity Utilization and Product Mix

To determine whether an investment in qualified industrial energy efficiency property will produce the minimum 1,000 barrels of oil equivalent savings per year, it is essential that an energy user be able to predict expected savings given a certain amount of uncertainty concerning future capacity utilization and product mix. As the Committee knows, in many industries a drop in capacity utilization is often accompanied by a significant drop in the efficiency with which energy is utilized. Therefore, a company must be able to predict with reasonable certainty the impact of such capacity changes on the expected savings from a prospective energy conservation investment. The same is true of future changes in product mix.

This can be accomplished relatively easily by running several "scenarios" utilizing the multiple regression equation developed to estimate energy savings. For example, if the company expected that the "worst case" estimate for plant utilization was a reduction in 20 percent over current capacity utilization, this could be factored into the model. The same is true of various changes in product mix. Once these scenarios were run, the company would be in a good position to judge whether, in fact, it can achieve the minimum 1,000 barrels of oil equivalent savings required for qualification under the proposed law.

Ability To Demonstrate Reduced Energy Usage per Unit of Output

The second key requirement of S. 750 for qualified industrial energy efficiency property is that the investment actually reduce energy usage per unit of output. Because the model can account for changes in both capacity utilization and product mix, it is relatively easy to determine the amount of energy used per unit of output even if the amount of output varies from month to month, or even day to day. At the end of the test year following installation of the qualified industrial energy efficiency property, it should be possible for each unit of output to measure the average energy usage required across the year to produce that unit. This would be done by arithmetically averaging the energy requirements for a unit of output for each month or week of production. This data can be obtained directly from the model and then compared with the energy usage per unit of output prior to installation of the qualified industrial energy efficiency property.

Selection of a "Representative" One-Year Period for Determining the Energy Baseline

Although we believe it is possible to identify a "representative" one-year period for purposes of establishing baseline energy usage, we feel that this requirement introduces the potential for conflict between the IRS and the energy user over the issue of whether the year selected was indeed "representative." The IRS might argue that an energy user had selected a year in which capacity utilization was very low, and hence, energy efficiency as well. This would make it easier for the energy user to demonstrate the needed savings, assuming capacity utilization increased in the future.

To avoid this problem, we suggest the bill be modified to utilize the approach we have developed at CSL which is to take the prior three years of energy usage in determining the baseline. We have had very good results with this approach and have not encountered the type of problems which would be expected by a requirement to pick a "representative" year of energy usage.

Ability to Separate Savings from Qualified Industrial Energy Efficiency Equipment from Savings Generated by Other Types of Conservation Investment

Under the proposed legislation, an energy user must be capable of separating the energy savings which result from "installation of property other than qualified industrial energy efficiency property." This means, for example, that an energy user must be able to separate the savings from qualified industrial energy efficiency property from those achieved by installation of a piece of specially defined energy equipment which is listed in the statute.

Of the five measurement problems I have outlined, this is undoubtedly the most difficult to overcome. However, I believe that our model can be modified in such a way as to segregate the energy savings from particular pieces of equipment, if necessary. This would require significant additional work to isolate those production variables which affect specific pieces of equipment, rather than the process in general, but I believe it could be done. If this approach is not successful, it is always possible to install individual metering equipment where it is needed. I want to emphasize that I do not think this will be necessary in most cases, and in no case to date has CSL found it necessary to install such equipment to accurately predict savings. We have installed individual meters occasionally just to check our model results. In general, individual meters should not be necessary for successful implementation of the proposed legislation.

Ability to Discount Energy Savings Produced by a Substantial Change in the Character of a Facility's Input or Output

A closely related requirement under the legislation is that the energy user be capable of discounting energy savings which are produced by a substantial change in either the input or output of his production process. The example frequently cited by the Treasury Department to illustrate this problem is a change in an auto production line from producing small compact cars to large luxury autos.

Once again, CSL believes this potential problem can be overcome relatively easily. We have faced this issue ourselves. In our discussions with the Chrylsler Corporation, for example, we were asked what would happen if Chrysler suddenly switched from the production of automobiles to tanks, a product which certainly uses more energy per unit of output than any automobile.

To accommodate such a change in product output, we would simply add a new product variable to the model and once again estimate the precise energy requirements, by fuel type, to produce one unit of that product. This new variable would then be incorporated in the multiple regression equation. The same procedure can be utilized to handle significant changes in product input.

CONCLUSION

In short, we do not believe that any of the measurement problems presented by the proposed legislation are insuperable. In fact, we have the capability to deal with virtually all of them at the present time. I am not suggesting that gathering the necessary data and developing the model is always easy. It does require significant effort on the part of both CSL and the energy user. However, we have been able to refine the model and its data requirements to the point where development of the multiple regression equation can be accomplished at a reasonable cost and within a reasonable period of time. If this were not the case, we would not have been successful in utilizing the approach in our own business.

Thank you for your attention, and I would be happy to answer any questions you may have at this time.

APPENDIX

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                         COLTON-WARTSILA ENERGY MODEL           16132 MONDAY, SEPTEMBER 14, 1981   . 3

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          PLOT OF GPRED*OBSN     SYMBOL USED IS P
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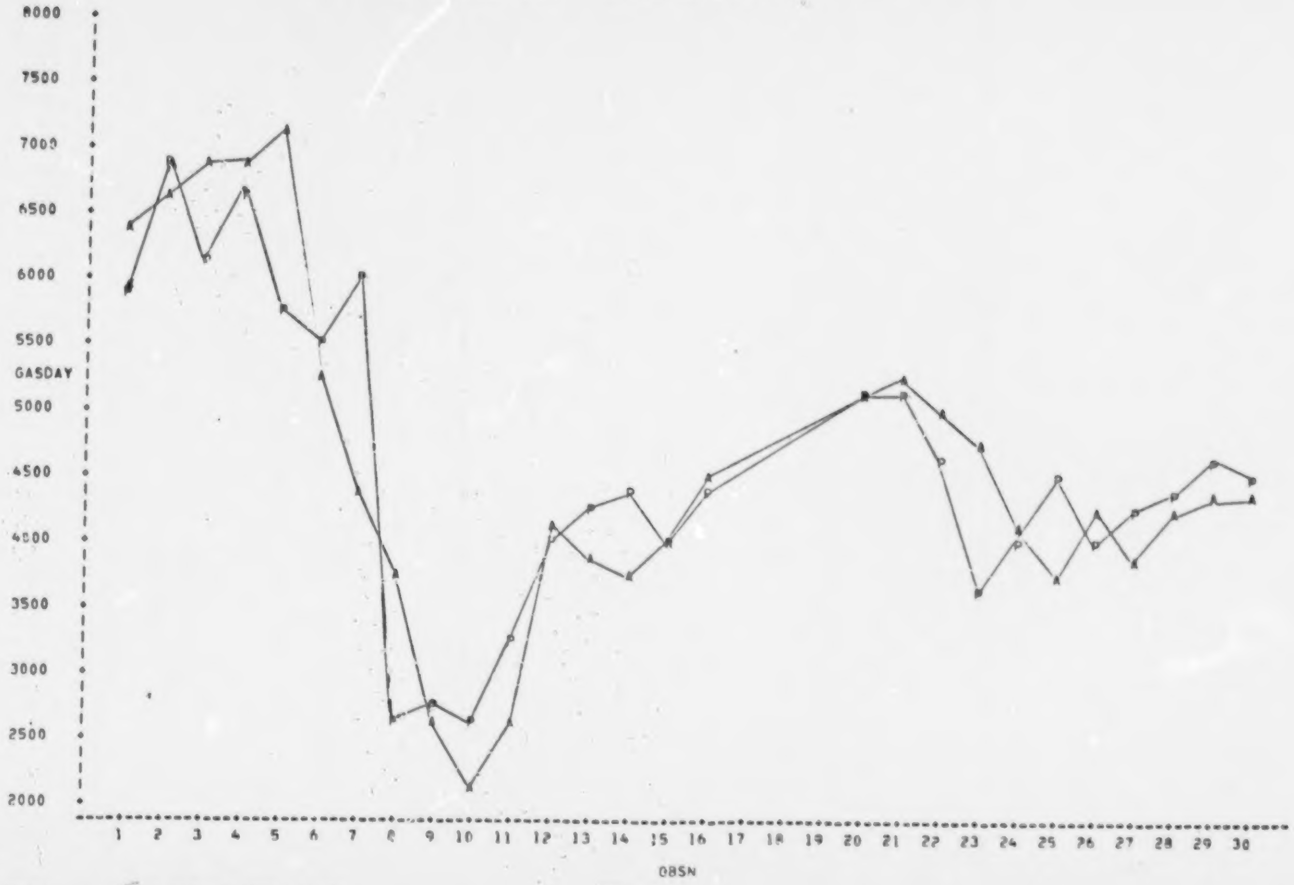

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NOTE:      6 [illegible]S HAD MISSING VALUES
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                         AEROJET ELECTROSYS  S ENERGY MODEL          12123 FRIDAY, SEPTEMBER 18, .81   7

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                    PLOT OF EPRED*OBSN    SYMBOL USED IS P
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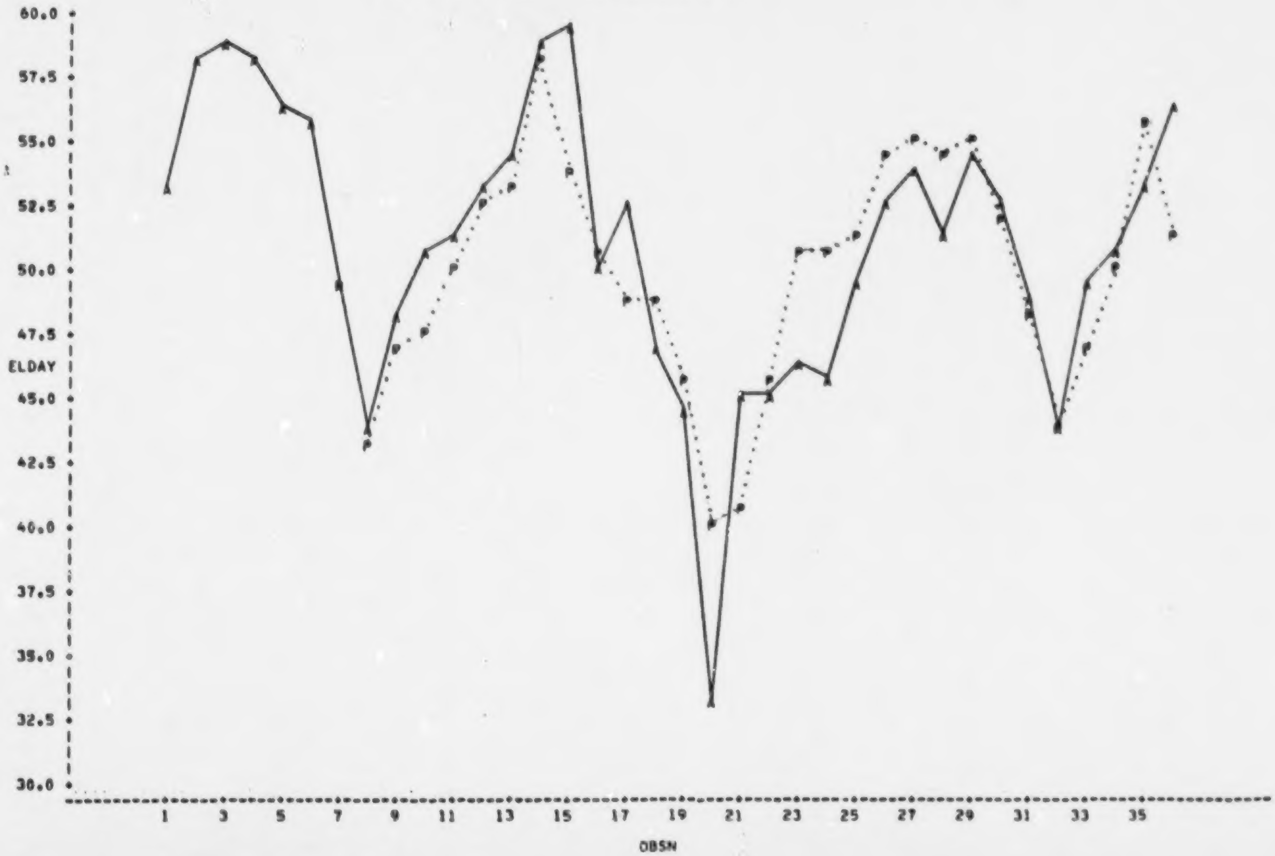

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NOTE:     6 OBS HAD MISSING VALUES
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GOULD CLEVELAND PLANT ENERGY STUDY 17:11 WEDNESDAY, APRIL 15, 1981

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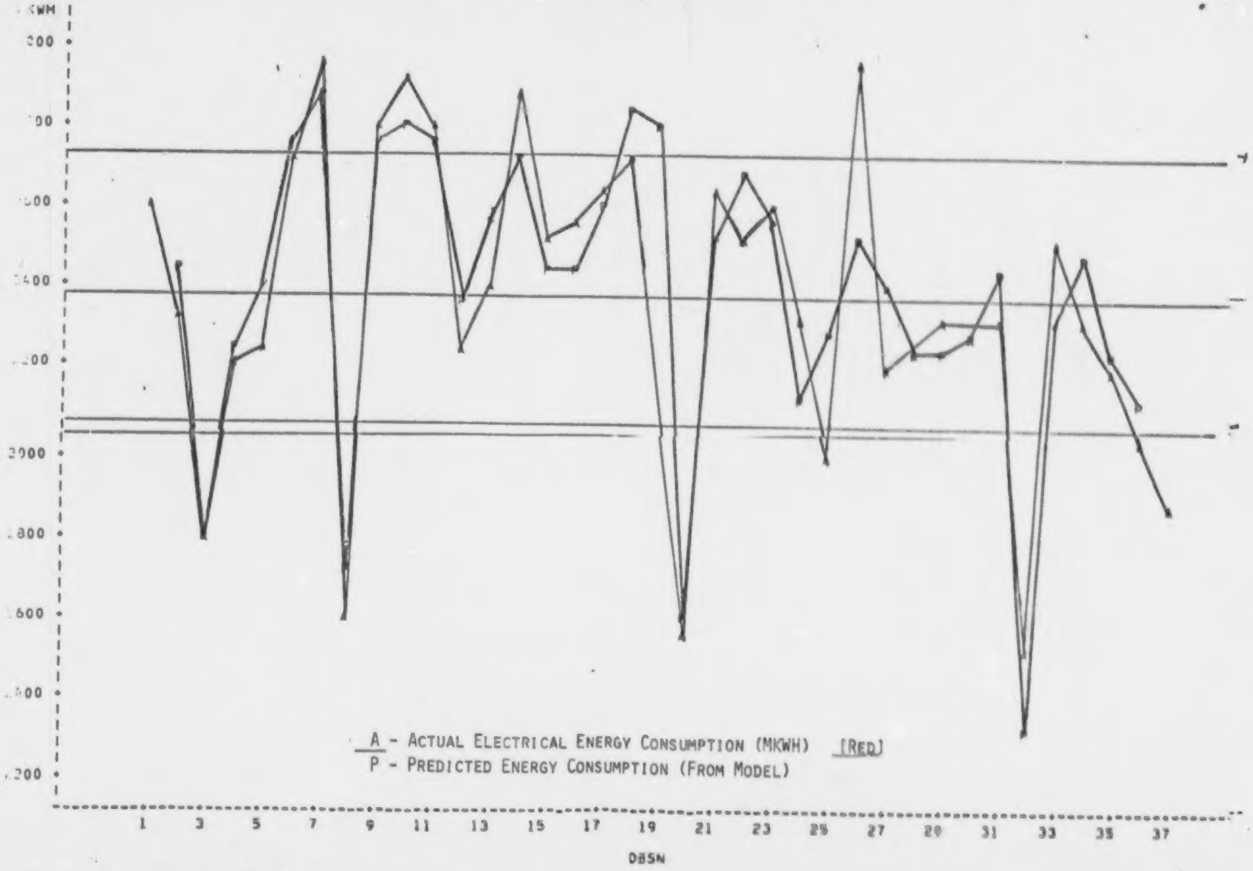
PLOT OF MKWHPRED*OBSN SYMBOL USED IS P



OTE: 2 OBS HAD MISSING VALUES

Senator WALLOP. Mr. Zukerman, the committee would be grateful for any specific counsel you might have as to favor the legislation a little bit.

I worry about lists. I sort of didn't want a list in the first place, because that is one of the reasons why we are backed around where we are, as the original tax credits were so constrictive that people simply couldn't take advantage of them. Less than half of what we had anticipated would be claimed by way of tax credits has been, and I think it is because of the list. I guess I don't know quite where we will go on that. My preference would be not to have a list; on the other hand, I have expressions from Treasury which tell me that at least some things had better be there or nobody will have anything to work on, on that.

But you are confident that a company could demonstrate reliably and satisfactorily to the IRS the savings that they claim?

Mr. ZUKERMAN. I don't know that you can ever demonstrate anything comfortably to the IRS.

Senator WALLOP. I would rephrase that slightly. [Laughter.]

Mr. ZUKERMAN. In our company we have had to do it, and do it successfully, in order to make the savings real, because the companies that we are involved with are sophisticated engineering-type companies who have on staff very capable people, and they want to know that when we give them a formula that they agree with or they disagree with that we work it out, and in the final analysis it does work. I mean it is the real world. We have been doing it for 2 years and have been doing it successfully. So we would make all of this data available to the committee and work with them in some way or another to help refine it.

Senator WALLOP. The 3-year baseline, you think, is the more reliable and perhaps less challengeable?

Mr. ZUKERMAN. Absolutely. When we started out, we originally started out with a 1-year baseline. And it doesn't work. It is not that it doesn't work, it doesn't work as well as you do with a 3-year baseline. What we really try to do, which is kind of difficult, we like to take 5 or 6 or 7 years. The longer we can get, the better it becomes, and the less it can be challenged. But I would say 3 years is a representative and good example of what should be done.

Senator WALLOP. Of course, that is in keeping with the concept of this bill, which is less involved with the creation of new factories than it is with the restructuring of the existing industrial plant, which I think is realistic in America, when we are capital-short, anyway. You are not going to be talking about scores and scores of approved plant installation; you are just talking about refurbished, remodeled, and more efficiently organized plants within the existing industrial structure.

Mr. ZUKERMAN. Well, I can tell you, Senator, that in our experiences in dealing with the Fortune 500 companies, they don't have money for energy conservation; they have it for the first easy thing that pays them back their return on the investment in the first 6 months or the first year. But the large companies, even with the money that they have that is capital-intensive, they are investing it in other things and not in energy-conservation measures. We do away with this with the tax situation that exists today, and I think it is going to hurt the energy program tremendously.

Senator **Wallop**. Would you or any other member of the panel care to comment? I think, in part, it is a fair characterization of Treasury's attitude that many of these things will just come about, anyway, that the market forces will propel them to the top of corporate planning. I would ask any of you to comment on that, or perhaps all of you.

Dr. **Ross**. Well, as I mentioned, we have been observing that many very attractive investments are not being made. They are being delayed. These companies are very capital-short, and they have a lot of things that come first in their minds before this type of investment. So I think your remarks about acceleration are exactly to the point. Those investments would be made at some time, but many of them are not being made now.

Ms. **Gallagher**. Senator Wallop, I might just elaborate by saying that many of the basic industries that use 70 percent of the energy used in industry were built when energy was very, very cheap; so the enormous magnitude of investments to be made in energy efficiency are really gigantic and the capital to do that just does not exist to do that today.

Mr. **Chandler**. I think both Linda and Marc are right, and I think the issue is, further, that if a market share investment is available, you want to take that investment before it slips away. Whereas, a cost-savings investment will be around for a little while. So if you have to choose one over the other, you choose the one that won't slip away.

Senator **Wallop**. Bill, I was interested in your testimony. And I would ask all of you if you have any means by which you would challenge the revenue assumptions of Treasury, which I think are extraordinary. They talk about up to $5 billion a year by 1986. That would mean that this program was successful, I think, beyond all our dreams. [Laughter.]

Have you given any revenue estimates to it?

Give them one thing. Try as we will, and I guess there is adequate reason for it, the Treasury Department never looks at the dynamic in revenue. They necessarily look at static revenue loss. They don't run the country as a business, and won't. I think that is not highly challengeable, because they are not sort of involved in guestimating as much as people in private business are. Nonetheless, given even static revenue, have you done any work as to what you think it might be?

Mr. **Chandler**. I was told by a former boss, Alvin Weinberg, never to make a prediction until I am very old. He said I might live to see it not come true. But I think that the Treasury estimates can be challenged on the grounds that they did not take into account the offsetting reduction in the amount of energy expenses that can be saved by reducing energy consumption. And this applies, also, to many of the other tax incentives as well as nontax incentives that the Federal Government offers. So to the extent that those are reduced and the Treasury revenue losses will also be reduced, and as I show in my testimony, it is conceivable, plausible, that the Treasury could actually save money by accepting S. 750.

Senator **Wallop**. Ms. Gallagher, do you agree with that? Has the alliance done any revenue estimating?

Ms. **Gallagher**. We have. Our estimate showed that it would be perhaps between $2 and $3 billion a year, not $5, for the 6-year life of the credit. I would agree with Bill Chandler's remarks that the offsetting expensing of energy would be reduced. You know, it is unclear as to exactly how much of an impact that is going to make, but it is something that the Treasury Department is low in estimating.

Senator **Wallop**. I wonder if you would do one last thing for me, and that is expand a little bit on the distortions that you see now in the Btu market that are Government induced.

Ms. **Gallagher**. Well, I think the first would be natural gas controls. It is an issue that the Congress may have an opportunity to address this session. In our opinion, the more quickly we address it, the better. The alliance is in the process of formulating a position on the decontrol of natural gas.

Senator **Wallop**. I would say this, that the closer we get to winter and then the closer we get to 1982, the less likely I see that event. I think we may have delayed that a year, at least.

Ms. **Gallagher**. Which is very unfortunate.

Senator **Wallop**. I agree. But, nonetheless, I think that Congress is not actually known for its ferocious periods in the face of an election year.

Please go on.

Ms. **Gallagher**. I will skip over that one. [Laughter]

The second one would be the pricing of electricity, in that electricity is also not priced currently at its replacement cost value. Oil now is. And I think that conservation is being reflected in the marketplace; 20-percent savings since oil decontrol came about in imported oil. And I think we could see a similar reaction with natural gas and replacement-cost pricing of electricity. So those are the two primary distortions in the marketplace.

Senator **Wallop**. Are those savings from fuel to fuel, when you factor out other things, are they as easily demonstrable for Btu unit? How would you appropriate it?

Mr. **Zukerman**. Yes. Actually, the savings that we measure are in every measurement of usage. In other words, if it is steam, we will show the measurement savings in steam; if it is in electricity, we will show it in electricity; or gas, whatever it has. We have now done approximately 100-plus projects, all the way from a $14 million annual utility bill papermill in Virginia to about 30 bakeries. Now, when we think of a bakery, we think of a very interesting category. It is not a Mom and Pop situation, it is a commercial bakery like Sara Lee, where they are making different types of products in which you have a utility bill of $2 and $3 million annually. So the measurements that come out depend on what is going in; but it is very simple, basically. It looks difficult, but after the trial and error we have had over the past 2 years, it is pretty simple today.

Senator **Wallop**. Thank you all very much. I much appreciate your testifying this morning.

I see Mr. Glickman has arrived. We will have his testimony next.

Mr. **Glickman**. Thank you very much.

Senator **Wallop**. Good morning.

STATEMENT OF DAVID G. GLICKMAN, DEPUTY ASSISTANT SECRETARY OF THE TREASURY FOR TAX POLICY

Mr. GLICKMAN. Mr. Chairman, I want to first apologize to you and to the committee for our late arrival. I wish that I could tell you that I was at the Treasury Department making some important decision, but it is simply not the case. Apparently, looking at the size of the audience, we were the only ones who didn't get the word that it had been moved from 9:30 back to 9, and I do apologize for that.

I am pleased to appear before you today at your hearings on S. 750 and S. 1288. Since the committee is obviously aware of what is in these bills, I will not go through the summary, although our statement does summarize each one of these bills.

The administration has a number of concerns with tax credits for energy conservation, but for the reasons I will mention hereafter we are not prepared to comment at this time on the specific proposals before this subcommittee.

Congress recently enacted the largest tax reduction in the history of this Nation. This landmark tax act contains significant provisions, specifically the accelerated cost recovery system (ACRS), that will increase business investment in new plant and equipment and will result in the revitalization of our economy.

Consistent with our philosophy of reliance on the operation of the marketplace to allocate capital efficiently targeted tax incentives were generally rejected. Subsidies for a narrow class of eligible investment in favored resources can interfere, in our judgment, with the business decisionmaking and divert capital, workers' initiative, from what may be more productive uses elsewhere in the economy.

A significant amount of the business investment stimulated by ACRS will be for energy-conservation equipment and equipment designed to produce alternate fuels. Thus, in large part, it would seem, the tax incentives provided by these bills duplicate the efforts of the Economic Recovery Tax Act. In our view, the effect of the existing energy credits must be examined in combination with ACRS in the regular investment tax credit.

The original reasons for providing tax incentives for conservation in 1978 have, to a great extent, been reduced significantly. For the most part these incentives were proposed and enacted when price and allocation controls were in effect on both crude oil and natural gas. Because price controls artificially depress energy prices below what the market would have charged, business firms and households had insufficient incentives to invest in energy-conserving assets or alternate energy sources other than oil and gas and to use alternate fuels such as alcohol, wood, biomass, et cetera.

Therefore, an argument could be made that in the absence of market forces tax incentives for conservation and production of renewable energy should be provided. At that time there was substantial political resistance to decontrol and an apparent preference to retain price controls and provide tax incentives to conserve.

The decontrol of crude oil prices completed in January of this year, and the scheduled partial decontrol of natural gas prices, significantly reduced the strength of this argument for tax incentives, since the cost of energy is at the world market price levels for oil and is approaching those levels for natural gas.

For these reasons we question whether it is desirable to expand the present energy tax credits. Indeed, these same considerations have led the President to direct the Treasury to review the existing credits. In this process we are continuing to meet with representatives of all affected taxpayers and others with an interest in this area. We are also studying measures such as S. 750 and S. 1288 as part of our analysis. We do note that S. 750 contains a credit for qualified industrial energy efficiency property, which we understand is an attempt to target the tax credit to the industrial conservation projects where the incentive effect will be the greatest. We will provide our detailed comments on this approach as well as the other features of both bills for the record, when our analysis has been completed.

Senator WALLOP. Thank you, Mr. Glickman.

I would say this: That the bill does not seek to expand the existing tax credit. I think if the administration's concept of it is that it seeks to expand the existing tax credit, it is basically wrong as a concept. What we intend to do is to make the existing tax credits accountable. It is not that we want to go through that "buy a car and get a check" concept any longer, but you have to be able to demonstrate.

This would appear to be, in my estimation and I think for a lot of people in the country, an overall benefit to America from the standpoint of security. I can appreciate your remarked attitudes within the administration I have sat here and, in many instances, expressed my own. But even now you cannot believe that the energy market is a free market in this country. And I think to that extent it still has to have some attention paid to it.

You were here, I think, when I commented on gas. I think it would be a very reluctant Congress to do it as you go into winter. And, as you get out into the sowing season next June, I think it is even less likely. That is regrettable, but I think it is there. And I think electricity is kind of distorted all across the country, depending on where you are or what you are paying.

I hope that the administration holds an open mind on this and will at least be willing to listen to Mr. Zukerman when we begin to demonstrate that we think it is possible to make those measurements, before getting sealed off into a position that would be embarrassing to retreat from. I hope that you will stay open on it until the record is complete, because I believe that we can demonstrate that this is part and parcel of President Reagan's personal philosophy of restoring productivity to the American scene and of restoring security to a country which is insecure on more than just the military level. We are insecure on the energy level, too. That seems to me to be part and parcel of Government's obligation to the people, to provide as secure an economy and as secure a nation as you can.

Really, they have done a lot by way of opening up exploration and by providing incentives for exploration with the decontrol of oil. There are a number of things out which are creative on that scene, but this would be a stroke in balance, I think, to put energy policy into a security policy for the country. It would really behoove the administration to take a careful look before rejecting it. I would hope that that would be the case.

Mr. **Glickman**. Mr. Chairman, obviously the administration's desires concerning the economy and the security of this country are totally consistent with yours. We are familiar with your views as to how this proposal interplays with that goal. As I said, we are trying to talk to as many people as possible to make sure that whatever action the administration finally recommends to the Congress, that we will have taken everything into consideration; thus, I can assure you that we are going into this with an open mind.

Senator **Wallop**. I hope that if I send some folks down to talk they will get to be heard, too.

Mr. **Glickman**. They will, sir.

Senator **Wallop**. All right. Thank you very much. The next panel consists of Thomas K. Singer, vice president of human resources and public affairs at the Kaiser Aluminum & Chemical Corp.; Clay Poole, vice president, corporate energy, Owens-Corning Fiberglas; and Richard Hughes, executive vice president, Union Carbide Corp.

Tom, would you please proceed?

For Release Upon Delivery
Expected at 9:30 EDT
October 19, 1981

STATEMENT OF
DAVID G. GLICKMAN
DEPUTY ASSISTANT SECRETARY (TAX POLICY)
DEPARTMENT OF THE TREASURY
BEFORE THE SUBCOMMITTEE
ON ENERGY AND AGRICULTURAL TAXATION
SENATE FINANCE COMMITTEE

Mr. Chairman and Members of the Subcommittee:

I am pleased to appear before you today at your hearings on S. 750, the "Industrial Energy Security Tax Incentives Act of 1981" and S. 1288, the "Commercial Business Energy Tax Credit Act of 1981."

S. 750 would expand the energy tax credit definition of alternative energy property, specially defined energy property, recycling equipment and cogeneration equipment, double the energy credits for such property from 10 percent to 20 percent, and extend these credits through 1986. These credits generally are scheduled to expire on December 31, 1982. The bill also would provide a new credit for certain energy efficiency and fuel conservation expenditures computed by reference to the amount of energy saved by the investment.

S. 1288 would modify the definition of specially defined energy property to include eleven new devices, double the level of the credit from 10 to 20 percent, and extend the credit through 1986. Eligibility would be extended to property installed in connection with any existing industrial, retail or commercial process, activity, facility, building or equipment. Present law limits the credits to installations in existing industrial or commercial processes. The bill also would provide a 20 percent energy credit for insulation installed in or on an existing industrial, retail, or commercial building.

The Administration has a number of general concerns with tax credits for energy conservation, but for the reasons stated hereafter we are not prepared to comment at this time on the specific proposals before this Subcommittee.

Congress recently has enacted the largest tax reduction in the history of this nation. This landmark tax act contains significant provisions that will increase business investment in new plant and equipment and will result in a revitalization of our economy. Consistent with our philosophy of reliance upon the operation of the marketplace to allocate capital efficiently, targeted tax incentives were generally rejected. Subsidies for a narrow class of eligible investments and favored resources can interfere with business decision making and divert capital, workers, and initiative from what may be more productive uses elsewhere in the economy.

A significant amount of the business investment stimulated by ACRS will be for energy conserving equipment and equipment designed to produce alternative fuels. Thus, in large part, the tax incentives provided by these bills duplicate the effects of the Economic Recovery Tax Act. In our view, the effect of existing energy credits must be examined in combination with ACRS and the regular investment tax credit.

The original reasons for providing tax incentives for conservation in 1978 have, to a great extent, been reduced significantly. For the most part, these incentives were proposed and enacted when price and allocation controls were in effect on both crude oil and natural gas. Because price controls artificially depressed energy prices below what the market would have charged, business firms and households had insufficient incentive to invest in energy-conserving assets or in alternative energy sources (other than oil or gas), and to use alternative fuels, such as fuels derived from alcohol, wood or biomass. Therefore, an argument could be made that in the absence of market forces tax incentives for conservation and the production of renewable energy should be provided. At that time there was substantial political resistance to decontrol and an apparent preference to retain price controls and provide tax incentives to conserve.

The decontrol of crude oil prices, completed in January, 1981, and the scheduled partial decontrol of natural gas prices, significantly reduce the strength of this argument for tax incentives, since the cost of energy is at world market price levels for oil and is approaching those levels for natural gas.

For these reasons, we question whether it is desirable to expand the present energy tax credits. Indeed, these same considerations have led the President to direct the Treasury to review the existing credits. In this process, we are continuing to meet with representatives of all affected taxpayers and others with an interest in this area. We also are studying measures such as S. 750 and S. 1288 as part of our analysis.

We understand that S. 750 contains a credit for qualified industrial energy efficiency property, which is an attempt to target the tax credit to industrial conservation projects where the incentive effect will be the greatest. We will provide our detailed comments on this approach as well as the other features of both bills for the record when our analysis has been completed.

STATEMENT OF THOMAS K. SINGER, VICE PRESIDENT OF HUMAN RESOURCES AND PUBLIC AFFAIRS AT THE KAISER ALUMINUM & CHEMICAL CORP.

Mr. SINGER. Good morning, Mr. Chairman. I am Tom Singer, a vice president of Kaiser Aluminum & Chemical Corp. With me this morning is Ron Richart, director of energy policy for Union Carbide; Clay Poole, who is vice president of Owens-Corning Fiberglas; and Stew Van Scoyoc, with Charls Walker and Associates.

We are here this morning, Senator Wallop, representing a group of 11 companies. In addition to the three here testifying this morning, our members include Alcoa, American Can, Ashland Chemical, Container Corp. of America, Lone Star Steel, Owens-Illinois and Weyerhaeuser.

I will summarize our written statement which I have submitted, and I request it be made part of the record.

Senator WALLOP. Yes. All statements will be included in their entirety in the record. Thank you.

Mr. SINGER. Now Mr. Glickman has just testified, and I think we can say that we agree with him on one point: Substantial progress certainly has been made toward developing an overall economic policy which recognizes the need for increasing productive investment. The new Tax Act greatly improves the prospects for economic revitalization through its incentives for savings and investment.

Of particular importance to companies such as ours are the tax depreciation rules, which will increase the amount of capital available for investment for our companies.

It is very essential, Senator Wallop, that the fundamental components of this new act be left in place and be given time and opportunity to prove their effectiveness.

Now, turning to energy policy, we support the administration's efforts toward decontrol of energy prices and removal of energy-use restrictions. And we agree with you, Senator Wallop, that in the long run the soundest Federal policy is to rely on market prices to govern energy supply and consumption. However, in the short term, temporary measures are needed to manage this transition from artificially low prices to market-priced energy. Now, the energy tax credits embodied in S. 750, we think, are an essential component of a transition strategy.

As you know, Senator Wallop, we in industry have already made substantial progress in energy conservation, but the next steps require extremely large capital investments. Targeted tax credits for investments in energy conservation and in fuel switching will accelerate these investments. The acceleration effect will be enhanced by limiting the credit to a fixed period. S. 750, I think, adds 4 years, and it would then come to an end.

So, I would like to emphasize that the energy tax credits are needed as a short-term strategy. Once energy prices are decontrolled and once 10–5–3 is fully phased in, which takes time, and once industry has had sufficient time to implement major energy investment programs, then I think we can afford to look at moving away from energy tax incentives. In our opinion, all of this would occur by the mid- to late-1980's.

Turning to specifics, our group fully supports the principal components of S. 750. We are particularly supportive of the provisions which establish a new category of eligible investment called QIEEP, qualified industrial energy efficiency property. This category permits energy-saving investments to qualify if the projects meet certain qualifications and show an actual reduction in energy consumption per unit of output. The amount of the credit is dependent upon the amount of energy saved. This provision would stimulate a large number of energy-saving investments that do not qualify under the existing law, the 1978 law.

The 20-percent credit in S. 750 was proposed prior to the enactment of 10–5–3. Now that 10–5–3 is in place, and in view of the current budgetary considerations before the Nation, our group feels it would be appropriate to consider revising S. 750 to put a 10-percent limit.

In conclusion, as a group we urge enactment of some legislation which will include the essential features of the bill, S. 750.

Now, turning for a minute to my company, to the Kaiser Aluminum situation. We have developed an energy-conservation plan that, if fully implemented, will require a capital investment of between $1 billion and $1½ billion in the next 10 to 15 years. This conservation plan, combined with the energy improvements that we have already undertaken since the mid-1970's, will reduce our energy requirements by more than 25 percent by 1990.

What does this mean? It will result in an energy savings equivalent to approximately 8.6 million barrels of oil per year for Kaiser Aluminum alone, and, of course, for the Nation.

Following enactment of the Energy Tax Act of 1978, our board of directors met and approved the largest single energy-conservation project ever undertaken by our company, which involved the expenditure of $154 million, exclusively for energy conservation, at our plant in Baton Rouge, La. Shortly thereafter we issued a letter to all of our plant managers, pointing out that the 10-percent energy credit was available, and we asked them to review all of our projects to determine which, if any, could be accelerated. A number of our energy-conservation projects were indeed accelerated as a result of this legislation.

Let me give you a more recent example of the effectiveness of tax credits in accelerating energy projects. This is our program for computer control of aluminum reduction cells, and it is called microprocessors. Earlier this year Kaiser Aluminum decided that $15 million of accelerated spending for microprocessor installation should be approved and initiated immediately. I can tell you the energy tax credit was a significant factor in our reaching that decision. As a result of accelerating this investment the corporation will save a little over 100 million kilowatt hours in electricity per year by 1983. Our cost, our investment for this project, represent under $1,300 per kilowatt of electricity saved, which compares with about half the price for building a new nuclear or a new coal powerplant.

With energy prices continuing to escalate at a rapid rate, we at Kaiser will do everything feasible to reduce our energy consumption, and, of course, our costs. However, energy-conservation investments must compete with all other investments, as Professor Ross pointed out earlier, and the opportunities for conservation investments far exceed our means to implement them on a timely basis. The incentives in S. 750 are needed, and they will produce substantial benefits for the Nation.

Now, Clay Poole will comment for Owens-Corning Fiberglas.

Senator **Wallop**. Thank you.

[The prepared statement follows:]

TESTIMONY OF THOMAS K. SINGER

VICE PRESIDENT

KAISER ALUMINUM & CHEMICAL CORPORATION
BEFORE THE
SENATE FINANCE COMMITTEE

SUBCOMMITTEE ON ENERGY & AGRICULTURAL TAXATION

OCTOBER 19, 1981

MR. CHAIRMAN, I AM TOM SINGER, VICE PRESIDENT OF KAISER ALUMINUM & CHEMICAL CORPORATION. KAISER ALUMINUM IS PLEASED TO HAVE THIS OPPORTUNITY TO TESTIFY BEFORE THIS DISTINGUISHED COMMITTEE ON AN ISSUE OF CRUCIAL NATIONAL ENERGY IMPORTANCE.

KAISER ALUMINUM IS A LARGE ENERGY-CONSUMING COMPANY IN THE UNITED STATES. WE HAVE 79 PLANTS LOCATED IN 30 STATES AND CONSUME THE EQUIVALENT OF APPROXIMATELY 34 MILLION BARRELS OF OIL PER YEAR. THE FEA SURVEY OF A FEW YEARS AGO PLACED OUR CORPORATION IN THE TOP 25 ENERGY-CONSUMING COMPANIES IN THE COUNTRY. OUR PRODUCTS INCLUDE ALUMINUM, INDUSTRIAL AND AGRICULTURAL CHEMICALS AND HIGH-GRADE REFRACTORIES FOR INDUSTRIAL FURNACES. ENERGY COSTS ARE A HIGH PERCENTAGE OF THE MANUFACTURING COSTS OF THESE PRODUCTS. ENERGY IS, THEREFORE, A PRIMARY COMPETITIVE FACTOR IN OUR BUSINESS AND ONE OF OUR FOREMOST CORPORATE PRIORITIES IS TO IMPROVE ENERGY EFFICIENCIES IN OUR MANUFACTURING PROCESSES

AS RAPIDLY AS POSSIBLE. WE HAVE RESPONDED TO THE ENERGY CRISIS BY SIGNIFICANTLY ESCALATING OUR R&D ACTIVITIES ON NEW PROCESS DEVELOPMENTS, SYSTEMATICALLY EXAMINING OUR EXISTING PLANTS AND PROCESSES TO TUNE UP OUR OPERATIONS, AND MAKING MAJOR SHIFTS IN OUR CAPITAL SPENDING PROGRAMS TO TARGET IMPROVEMENTS IN ENERGY EFFICIENCY AND FUELS CONVERSION.

OF THE OPPORTUNITIES FOR IMPROVEMENTS IN ENERGY USE WE HAVE EXAMINED, THE MOST SIGNIFICANT IMPROVEMENTS REQUIRE LARGE CAPITAL EXPENDITURES. WE HAVE IDENTIFIED NEW TECHNOLOGIES IN THE PAST FEW YEARS WHICH COULD SIGNIFICANTLY IMPROVE THE ENERGY EFFICIENCY IN OUR PLANTS. HOWEVER, AS IS THE CASE WITH MOST BASIC INDUSTRIES, THE AMOUNT OF CAPITAL REQUIRED TO MAKE THESE CHANGES IS STAGGERING. WE HAVE DEVELOPED AN ENERGY CONSERVATION PLAN WHICH WILL REQUIRE A CAPITAL INVESTMENT OF OVER A BILLION DOLLARS. WE BELIEVE WE CAN IMPLEMENT THESE PROGRAMS DURING THE NEXT 10 TO 15 YEARS, DEPENDING ON BUSINESS CONDITIONS AND THE ECONOMIC FRAMEWORK PROVIDED BY THE GOVERNMENT. TO PUT THESE ENERGY CONSERVATION INVESTMENTS IN PERSPECTIVE FOR YOU, I SHOULD POINT OUT THAT THE TOTAL ASSETS OF OUR CORPORATION ARE NOW SLIGHTLY MORE THAN $3 BILLION.

THE COST OF THIS PROGRAM IS HIGH AND IT WILL BE DIFFICULT TO IMPLEMENT, BUT THE REWARDS IN ENERGY SAVINGS FOR KAISER ALUMINUM AND THE COUNTRY ARE VERY ATTRACTIVE. OUR CURRENT PROGRAM, COMBINED WITH THE ENERGY IMPROVEMENTS WE HAVE BEEN MAKING SINCE THE MID-1970'S, WILL REDUCE OUR ENERGY REQUIREMENTS BY MORE THAN 25 PERCENT. BY 1990, THIS WILL RESULT IN AN ENERGY SAVINGS EQUIVALENT TO APPROXIMATELY 8.6 MILLION BARRELS OF OIL PER YEAR FOR KAISER ALUMINUM AND THUS FOR THE COUNTRY.

I WOULD NOW LIKE TO TALK MORE ABOUT THE SPECIFIC ENERGY SITUATION WITHIN KAISER ALUMINUM AND, IN SO DOING, EMPHASIZE FOUR POINTS THAT WE BELIEVE ARE HIGHLY PERTINENT TO THIS HEARING AND TO S. 750.

1. THE EXISTING 10 PERCENT ENERGY INVESTMENT TAX CREDIT PASSED IN 1978 HAS BEEN VERY EFFECTIVE IN STIMULATING INDUSTRIAL ENERGY CONSERVATION INVESTMENTS.
2. ADDITIONAL FEDERAL INCENTIVES, SUCH AS THOSE INCLUDED IN S. 750, WILL GREATLY ACCELERATE ENERGY EFFICIENCY AND FUEL SWITCHING INVESTMENTS.
3. IMPROVEMENTS IN ENERGY EFFICIENCY ARE THE CHEAPEST AND QUICKEST WAY FOR THE COUNTRY TO SUBSTANTIALLY REDUCE ITS OIL IMPORT DEPENDENCE.

4. FEDERAL INCENTIVES TARGETED TO THE INDUSTRIAL SECTOR WILL SAVE TREMENDOUS QUANTITIES OF ENERGY IN THE 1980'S.

IN OCTOBER OF 1978, CONGRESS PASSED THE ENERGY TAX ACT OF 1978. THIS PROVIDED AN ADDITIONAL 10 PERCENT INVESTMENT TAX CREDIT FOR CERTAIN INDUSTRIAL ENERGY CONSERVATION INVESTMENTS. THERE WERE TWO IMMEDIATE REACTIONS WITHIN MY COMPANY. FIRST, ON OCTOBER 24, 1978, OUR BOARD OF DIRECTORS APPROVED THE LARGEST SINGLE ENERGY CONSERVATION PROJECT EVER UNDERTAKEN BY OUR COMPANY: A $154 MILLION MODERNIZATION OF OUR BATON ROUGE, LOUISIANA ALUMINA REFINERY, EXCLUSIVELY FOR ENERGY CONSERVATION PURPOSES. THIS PROJECT HAD BEEN HELD IN ABEYANCE FOR SEVERAL MONTHS PENDING THE SHAPE OF THE FINAL TAX CREDIT LEGISLATION. A SUBSTANTIAL PORTION OF THE PROJECT QUALIFIED FOR THE ADDITIONAL 10 PERCENT CREDIT.

ALSO, IN DECEMBER OF 1978, OUR CORPORATE ENERGY AND TAX DEPARTMENTS ISSUED A LETTER TO ALL PLANTS AND DIVISIONS POINTING OUT THAT THE 10 PERCENT ITC WAS NOW AVAILABLE FOR CERTAIN TYPES OF PROPERTY. THE LETTER DIRECTED THAT ALL REQUESTS FOR CAPITAL APPROPRIATIONS INCLUDE THE IMPACT OF THIS ITC AND CALLED FOR A REVIEW OF ALL PROJECTS TO DETERMINE WHERE THE TAX CREDIT COULD

BE UTILIZED AND WHICH PROJECTS SHOULD BE ACCELERATED IN ORDER TO TAKE FULL ADVANTAGE OF THE CREDIT. WITHIN A MATTER OF MONTHS A NUMBER OF PRIORITY SHIFTS TOOK PLACE AND PROJECTS AIMED AT UTILIZING THE TAX CREDIT WERE BEING SUBMITTED TO THE HEADQUARTERS.

THERE IS A MORE RECENT EXAMPLE WHICH ALSO DEMONSTRATES THE EFFECTIVENESS OF THE EXISTING TAX CREDIT IN RAISING THE PRIORITY OF ENERGY CONSERVATION PROJECTS. FOR SEVERAL YEARS THE CORPORATION HAS BEEN DEVELOPING TECHNOLOGY FOR COMPUTER CONTROL OF OUR ELECTROLYTIC ALUMINUM REDUCTION POTS USING MICROPROCESSORS. TEST WORK WAS DONE ON POTLINES IN SEVERAL PLANTS; HOWEVER, THE FULL IMPLEMENTATION OF THESE MICROPROCESSORS HAD BEEN HELD PENDING AVAILABLE CAPITAL AND COMPLETION OF OTHER PRIORITY WORK. THE MICROPROCESSORS QUALIFY UNDER THE EXISTING 10 PERCENT ENERGY TAX CREDIT AS AN ENERGY CONTROL SYSTEM. EARLY IN 1981, WE DECIDED THAT ALL MAJOR DIVISIONS SHOULD REVIEW THEIR PROJECTS TO SEE IF THERE WERE LOGICAL CANDIDATES FOR ACCELERATED SPENDING. FOLLOWING EXTENSIVE REVIEWS, IT WAS CONCLUDED THAT $15 MILLION OF ACCELERATED SPENDING FOR MICROPROCESSOR INSTALLATIONS AT TWO OF

OUR REDUCTION PLANTS SHOULD BE APPROVED AND INITIATED IMMEDIATELY. A SIGNIFICANT FACTOR IN THAT DECISION WAS THE FACT THAT THESE INSTALLATIONS QUALIFIED FOR THE ADDITIONAL TAX CREDIT. THE PROJECTS WERE APPROVED; AND, AS A RESULT, THE CORPORATION WILL SAVE OVER 100 MILLION KILOWATT HOURS OF ELECTRICITY PER YEAR BY THE END OF 1982. IN ADDITION, THE PLANTS WILL PRODUCE MORE ALUMINUM BECAUSE OF THE IMPROVED REDUCTION CELL OPERATIONS. NATURALLY, THIS MEANS THE COUNTRY WILL ALSO REALIZE THESE ENERGY SAVINGS AND AT A CAPITAL COST FAR MORE ATTRACTIVE THAN THE CAPITAL WHICH WOULD BE REQUIRED TO PRODUCE THE SAME QUANTITY OF ELECTRICITY FROM A NEW CENTRAL STATION POWER PLANT. THE TOTAL COST FOR THIS INVESTMENT IS UNDER $1,300 PER KILOWATT OF ELECTRIC POWER SAVED WHICH IS ABOUT HALF THE INVESTMENT REQUIRED FOR A NEW COAL OR NUCLEAR POWER PLANT. WE BELIEVE THIS CLEARLY DEMONSTRATES THE EFFECTIVENESS OF THE EXISTING ENERGY TAX CREDIT. IT IS ALSO INDICATIVE OF THE KIND OF INVESTMENTS THAT CAN BE MADE IF THE GOVERNMENT RECOGNIZES THE POTENTIAL FOR ENERGY CONSERVATION AND PROVIDES ADEQUATE INCENTIVES FOR ACCELERATING CONSERVATION.

THE QUESTION BEFORE THIS SUBCOMMITTEE TODAY IS WHETHER OR NOT THE FEDERAL GOVERNMENT SHOULD PROVIDE TAX INCENTIVES TO PROMOTE THE EARLY COMPLETION OF ENERGY SAVINGS PROJECTS. WE

BELIEVE A FIRM COMMITMENT ON THE PART OF THE FEDERAL GOVERNMENT THAT ENERGY CONSERVATION IS AN IMPORTANT ENERGY STRATEGY, THROUGH ENACTMENT OF LEGISLATION LIKE S. 750, WILL HAVE A MAJOR IMPACT ON THE RATE AT WHICH U. S. INDUSTRY CAN IMPLEMENT ENERGY EFFICIENCY PROJECTS.

LAST YEAR THE ALUMINUM ASSOCIATION UPDATED ITS BOOK ENTITLED, "ENERGY AND THE ALUMINUM INDUSTRY." THIS BOOKLET DISCUSSES THE ENERGY PROGRESS OF THE ALUMINUM INDUSTRY AND STRATEGIES THE INDUSTRY FEELS ARE MOST IMPORTANT FOR THE NATION. ATTACHED TO MY TESTIMONY IS A PAGE FROM THAT PUBLICATION SHOWING THE ACCELERATION IN NATIONAL ENERGY SAVINGS WHICH WE BELIEVE THE INCENTIVES IN S. 750 COULD ACCOMPLISH.

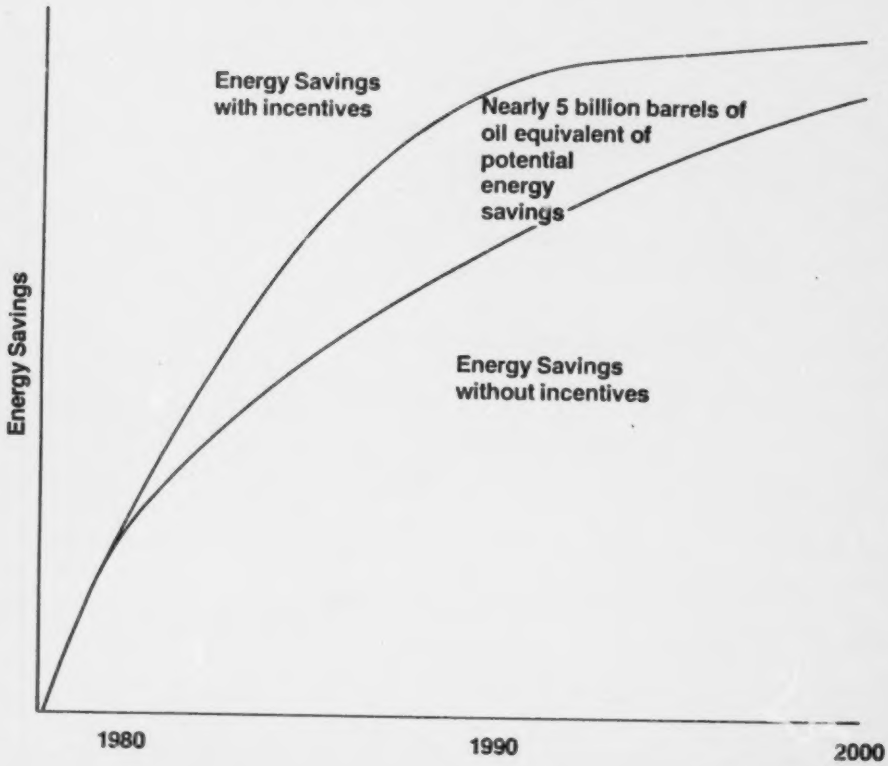
INVESTMENTS IN ENERGY EFFICIENCY ARE THE CHEAPEST AND FASTEST WAY FOR THE COUNTRY TO REDUCE ITS DEPENDENCE ON OIL IMPORTS. IF OUR CORPORATION IS ABLE TO COMPLETE ALL THE INVESTMENTS WE HAVE IDENTIFIED IN A 10-YEAR PERIOD, WE ESTIMATE WE WILL SAVE THE EQUIVALENT OF APPROXIMATELY 29 MILLION BARRELS OF OIL DURING THAT 10 YEARS. ONCE THE ENERGY SAVINGS FROM EACH OF OUR CAPITAL PROJECTS BEGIN, THE BENEFITS WILL CONTINUE TO ACCRUE YEAR AFTER YEAR. IN ADDITION, SOME OF OUR PROJECTS HAVE OTHER NON-ENERGY BENEFITS, SUCH AS IMPROVED LABOR PRODUCTIVITY OR IMPROVED PRODUCT OUTPUT.

WE BELIEVE KAISER ALUMINUM IS TYPICAL OF MANY LARGE ENERGY-CONSUMING INDUSTRIES IN THE COUNTRY. WITH ENERGY PRICES ESCALATING AT AN INCREDIBLE RATE, WE WILL DO EVERYTHING FEASIBLE TO REDUCE OUR ENERGY CONSUMPTION AND COSTS. HOWEVER, ENERGY CONSERVATION INVESTMENTS MUST COMPETE WITH ALL OTHER INVESTMENTS FOR OUR CAPITAL DOLLARS. OUR OPPORTUNITIES FOR CONSERVATION INVESTMENTS FAR EXCEED OUR MEANS TO IMPLEMENT THEM ON A TIMELY BASIS. WE ARE CONVINCED THAT AT KAISER ALUMINUM, AND FOR INDUSTRY GENERALLY, THE INCENTIVES IN S. 750 WILL ACCELERATE ENERGY EFFICIENCY AND FUEL SWITCHING PROJECTS AND THEREBY PRODUCE SUBSTANTIAL BENEFITS FOR THE NATION.

WE AT KAISER ALUMINUM WANT TO THANK THIS COMMITTEE FOR ALLOWING US TO PRESENT OUR ANALYSIS AND WE REMAIN READY TO CONTINUE OUR WORK WITH THE FINANCE COMMITTEE AND OTHERS IN SHAPING THIS IMPORTANT NATIONAL ENERGY STRATEGY. I WILL BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE.

THANK YOU.

INDUSTRIAL ENERGY SAVINGS FROM FINANCIAL INCENTIVES



The major U.S. heavy process industries, including aluminum, consume over 60% of the energy in the industrial sector. With R&D, improved technology and very large sums of capital, aluminum and other process industries can substantially improve energy efficiency. Rapid progress is already being made and most of these savings will be achieved by the year 2000, but they could be increased or accelerated greatly if strong government financial incentives were applied to assist with capital and economic problems. The aluminum industry believes these incentives are in the national interest in achieving this accelerated objective.

Source: Kaiser Aluminum and Chemical Corp.

Statement of the Ad Hoc Energy Conservation
and Fuels Conversion Group on S. 750
before the
Senate Finance Committee
Subcommittee on Energy and Agricultural Taxation
October 19, 1981

Mr. Chairman and Members of the Committee, it is a pleasure to be here today to discuss with you the vital subjects of energy conservation and fuels conversion. I am, Thomas K. Singer (Vice President, Human Resources and Public Affairs, Kaiser Aluminum and Chemical Corporation), and I am here today representing an Ad Hoc group of eleven large industrial users of energy (list attached). This group has been working together for over a year and a half to develop ways to provide appropriate incentives to encourage industrial conservation and conversion to alternative energy sources. A list of the companies participating in this effort and supporting this statement appears below.

I am accompanied today by Richard Hughes, Executive Vice President Union Carbide and Clay Poole, Vice President Corporate Engineering, Owens-Corning Fiberglas.

The eleven companies supporting this statement are broadly representative of a number of important industrial energy consuming sectors of our economy. We are here to lend our support to this Committee and particularly to you, Senator Wallop, as you continue your discussion on the vital topic of energy conservation and fuels conversion incentives. We strongly support the basic principals of S. 750 and urge that this Committee report out such legislation. As you know, the current business energy tax credits are scheduled to expire on December 31, 1982. In order to assure continuity in planning it is important that a decision be made to continue and improve these credits as early as possible.

Our group had its genesis during the windfall profit tax debate when it became apparent that the need for incentives for industrial energy conservation was not being adequately addressed. Our group has devoted considerable attention to the feasibility of accelerating such investments through programs of federal grants, loans and loan guarantees, tax credits or other measures. Our aim is not to suppress or grossly pervert market decisions. Rather it is to speed up those projects which though worthy on their own in a financial sense, are never-the-less postponed. Our goal, in short, is to encourage enactment of a limited term program to accelerate the rate at which energy efficiency and fuels conversion investments are made. Through this, the industrial sector can play an important role in helping to preserve our energy security through the 1980's while we continue to develop new sources for the 1990's and beyond.

We testified before this Committee slightly more than one year ago in support of earlier legislation that you had introduced, Mr. Chairman, (S. 3006). We did, however, urge that some changes be made in the legislation and we are glad to see that many of our suggestions have been incorporated in the latest version currently before this Committee. Additionally, as I know you will recall, the Treasury Department at that time, did suggest some changes in the legislation. Many of the suggestions of the Treasury Department were meritorious, we believe. We are pleased that the new legislation before us addresses the most significant of Treasury's earlier concerns.

We continue to support extension and clarification of energy tax incentives. We believe energy tax credits are consistent with the economic and energy policy needs of the nation.

ECONOMIC POLICY

Much has happened since we were here slightly more than a year ago. Much progress has been made toward developing an overall economic policy which recognizes the need for productive investment together with the need for sufficient savings to finance that investment. We certainly don't need to remind the members of this panel of the long-standing bias in our tax code towards consumption and against saving. President Reagan, due in no small part to the strong support he received from this Committee, was recently able to sign into law the Economic Recovery Tax Act of 1981, legislation that directly attacks that bias through a variety of provisions to encourage saving and promote productive investment.

Of critical importance for us and for all of the industrial sector was the enactment in that legislation of an accelerated cost recovery system (ACRS). Our group, while principally devoted to energy conservation incentives, has consistently supported a two-pronged policy approach. Our first priority, before enactment of improved targeted incentives, has always been the enactment of an effective across-the-board capital cost recovery system. Our member companies worked hard in support of the President's proposal in that area and were most gratified that this Committee and the Congress enacted that proposal. We also worked hard, as did many members of this Committee, to keep the President's proposed legislation relatively free of a variety of secondary measures, with the hope that that would help speed its passage through the Congress. In that regard, we specifically counseled supporters of legislation such as S. 750 that such proposals should not be promoted as part of the first tax bill, but rather that they deserved more careful consideration after the Congress had enacted the Administration's basic economic program.

As we all know, others were not so patient in advocating their particular programs, and the Economic Recovery Act did become somewhat encumbered. In any case, it did get enacted in relatively timely fashion and we are strongly supportive of it.

The ACRS proposals contained within that legislation will have a significant impact on the ability of our companies to expand and invest in the coming years. Effective cost recovery will significantly expand the "pie" of available capital for all investments across-the-board. It will have a major positive impact on our operations. We heartily commend the President and this Committee for your efforts to secure the timely enactment of this proposal.

It is our firm belief that due to passage of the Economic Recovery Tax Act, the country now has an effective overall economic policy framework which will help guide the business decision-making process over the next five to ten years. It is important that that policy be allowed to operate and that its fundamental components not be significantly altered before they have had an opportunity to prove their effectiveness. We cannot stress strongly enough the need to avoid a "start-stop" program.

ENERGY POLICY

Consistent with that approach, we believe that it is now appropriate for the Administration and this Congress to focus more closely on an effective overall energy policy. Until recently, most of our energy policy apparatus was the result of hastily conceived reactions to crisis situations. We now have an opportunity to adjust those policies in a more considered fashion. This is due largely to the current, unexpected but highly fortuitous energy situation we now find ourselves in. With all the bad news we seem to face each day, there has been one consistently good piece of news throughout all of 1981. That has been the excess in worldwide supply of oil over worldwide demand. While that excess in supply has been attributed by various experts to Saudi Arabian policy, the worldwide recession and energy prices leading to energy conservation, One fact is undeniable. We currently have an excess of worldwide supply over demand, on the order of two million or more barrels per day.

That excess in supply has lead to a stabilization, relative to recent history, in oil prices. This in turn has had a significant salutory effect on U.S. inflation and on our balance of payments. We must now make full use of this probably brief hiatus to rationalize our energy policies.

It is important to put this current surplus in perspective. If there was one thing that the decade of the seventies should have proved to us it is that no matter how much we view ourselves as being independent of other nations, in fact, we are critically dependent upon them. Nowhere is this more evident than in the energy area. While we are currently importing slightly below six million barrels of oil per day, it was only slightly more than a year ago that we were importing about eight million barrels per day. At that level we were spending the equivalent of $10 million each and every hour, or $90 billion dollars per year for imported oil. In fact, we need only go back to 1977 to get to our peak year of crude oil dependency. In that year we imported on average 8.8 million barrels of crude oil per day from abroad or a total of over 45 percent of our crude oil consumption.

The news is not all good, however. As we will show later, industry has not yet been able to adjust to the crushing energy price increases delivered in the seventies. There simply has not been enough time or capital to replace or remodel equipment dsigned for lower cost energy.

Looking to the future, we believe that the President's program for economic recovery will work. Our economy will rebound and we will move into a period of significantly increased economic activity along with reduced inflation. Inevitably, such a period of increased economic activity will lead to increased energy consumption.

The clear issue for policy makers is whether or not we can expect the current excess of world supply over demand to continue. If we can not, then we must be concerned about our own energy use, and how we can best prepare ourselves for that time when there is no longer a surplus.

Increasing energy efficiency is viewed by many as the quickest, most effective, least expensive and most environmentally sound way of reducing American dependence on foreign oil. The potential savings are dramatic. Stobaugh and Yergin in their widely read book, Energy Future, estimate that a balanced energy conservation program--one aimed at all sectors of government, business and households--could by the late 1980's save the energy equivalent of our oil imports, an amount equal to 8 million barrels a day. They further point out that the industrial sector, which currently consumes about 36 percent of the nation's energy, could provide a significant portion of these savings. While we do not underestimate the importance of, and need for, conservation in other sectors of our economy our focus is on the potential for increased industrial conservation.

We cannot afford to be lulled into a sense of temporary security based on the current transitory stability in world energy prices. Continuing instability in the oil producing regions leaves us no choice but to continue to reduce our level of dependence on non domestic energy sources. We must move as rapidly as practicable to increase our domestic sources of supply of all forms of energy while at the same time moving to increase the efficiency with which we use that energy.

We support the Administration's efforts toward decontrol of energy prices and removal of energy use restrictions. The soundest Federal energy policy over the long run is to rely on market prices to govern our activities for both energy supply and consumption.

We also recognize however that in the short term, certain temporary, transitional measures are needed.

Energy conservation tax incentives are an important transition measure to assist American industry during the transition from artificially low energy prices to market pricing of energy.

The federal government, through past and in some cases continuing practices, has kept energy prices significantly below their free market levels. Such actions in effect served as incentives for investments in inefficient plants and equipment. Additionally, these low prices were such that they failed to provide the economic justification for investment in improving energy efficiency. The effects of years of price controls cannot be turned around overnight. Appropriate incentives can cause an acceleration in the rate at which retrofits and replacement investments are made however.

Second, by providing an additional targeted incentive for conservation and fuels conversion the government would be recognizing that there are benefits external to an individual tax payer that accrue to the nation as a whole from a reduction in oil imports. These "extra-market" effects do not show up on a corporate balance sheet, but they do show up on the nation's balance sheet. Principal among them are the expenditures necessary for national security reasons due to our continuing dependence on insecure sources of foreign energy, together with the flow through effects of balance of payments deficits caused by the large outflow of energy dollars.

We strongly believe that a carefully designed program of limited term, targeted Federal incentives can have a significant positive impact on industrial investments in increased energy efficiency and fuels conversion in the near term.

THE ROLE OF S. 750

We think that S. 750 is an excellent attempt to construct such a program. It attempts to build on, extend, and improve the existing categories of industrial efficiency and conversion incentives enacted by Congress in the late 1970's.

In 1980, both the Republican and Democratic platforms recognized the important role industrial conservation could play in the coming decade. Furthermore, both recognized the advantages of providing incentives for conservation and fuels conversion, to accelerate investments in these areas.

We would like to make it clear that we are not talking about industrial conservation through minor changes in operations. American industries have a good record in making such adjustments. Operations are continuously re-examined for energy savings opportunities: energy efficiency in day-to-day operations is good business. For example, by 1978 the ten most energy intensive industries had already achieved energy efficiency improvements of 14 percent over 1972 usage. These savings are impressive. It stands to reason, however, that the easiest things have been done and that future reductions will be more difficult and costly to achieve.

Business investment in energy efficient plants and equipment must be increased sharply in order to succeed in taking the necessary giant step towards reducing energy dependence in the 1980's. As stated in the Department of Energy's conservation objectives for calendar year 1980, "studies of energy intensive processes with multi-industry application, as well as processes unique to particular industries, have suggested a large potential for energy conservation within the industrial sector." Such efforts will involve extensive retrofitting, alterations of processes, and acquisition and installation of major new plants and equipment. In the vast majority of cases, the technology currently exists to make these investments. The primary reason they are not being made is the shortage of investment capital that exists generally in industry today.

While the expected energy savings to be realized from such investments may eventually cause them to be made when capital becomes available, the issue for government policy makers is whether such investments should be accelerated through government incentives. In today's capital short environment, many of the investments so important to this nation's interests will likely be postponed or not made at all. This could be the result, if, as the case is today with most industrial firms, the list of desirable capital investment possibilities is so long that only projects of the highest priority can be funded.

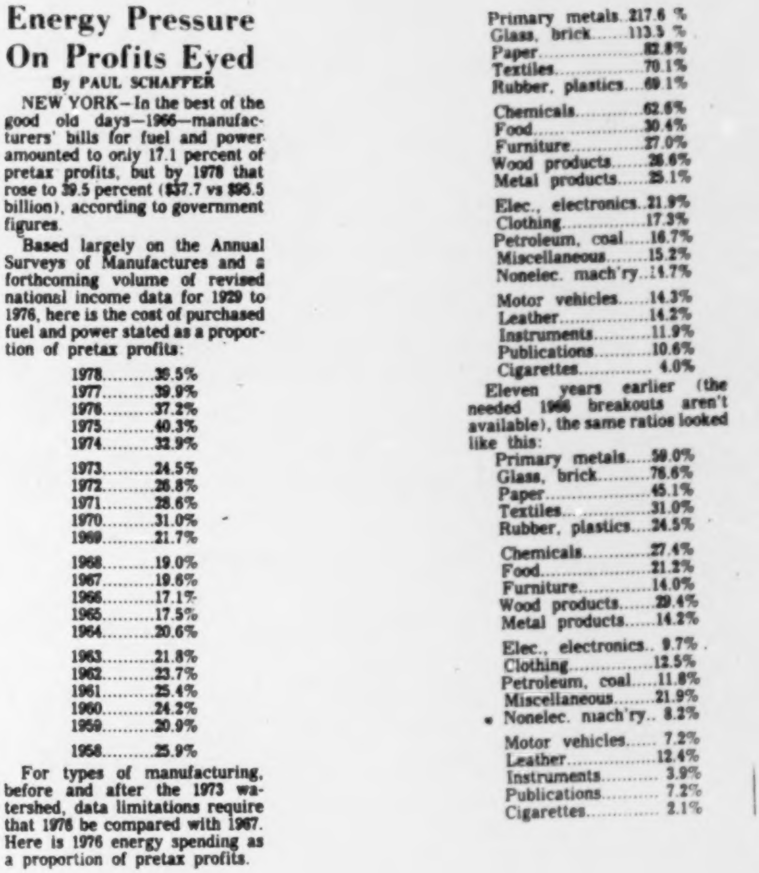
After making those investments mandated by government regulations in areas such as environmental control, as well as those with a higher financial return, or which serve a more immediate business purpose, many company's cash flow, even with the recently enacted accelerated cost recovery scheme, will not be sufficient to permit them to fully take advantage of the available energy saving investment opportunities. This is often true even where there is a long range monetary benefit from doing so. What is needed is a mechanism to make energy efficiency investments more attractive if done now, rather than at some later date.

The needed boost to energy efficiency and fuels conversion investments will not be sufficiently encouraged solely by the recent enactment of capital cost recovery legislation.

We believe, however, that combining the recently enacted accelerated cost recovery system with energy tax credits, such as those contained in S. 750, will be highly effective. We also believe that such credits are entirely consistent with the Administration's overall economic program.

In fact, as we have stated earlier, if this Committee believes, as we do, that the Administration's program will work to spur a revitalization of industrial activity, then you must be concerned about that increase in activity leading to an increase in energy consumption. Tax incentives to promote efficient use of energy can thus be viewed as an important complement to the economic revitalization sought by the Administration. While one could suppose, as some in the Administration have done, that from a tax policy point of view such incentives are outmoded, we believe that sound economic and energy policies would indicate to the contrary.

Nothing could do more to hamper our next round of industrial growth than a renewed round of major increases in energy prices. As the following table indicates, energy prices, even before the Iranian crisis run-up, were exerting considerable pressure on corporate profits. In the decade of the 70's, the cost of purchased fuel and power as a proportion of pretax profits increased by more than 30 percent. This is money that comes directly out of the cash available for reinvestment. We must reverse that trend while we continue to enjoy the current short-term respite from energy price increases. In the short term, effective energy conservation and fuels conversion incentives have a significant potential to accomplish such a reversal and thus minimize the potential for further economic disruption.



Energy Pressure On Profits Eyed

By PAUL SCHAFFER

NEW YORK—In the best of the good old days—1966—manufacturers' bills for fuel and power amounted to only 17.1 percent of pretax profits, but by 1978 that rose to 39.5 percent ($37.7 vs $95.5 billion), according to government figures.

Based largely on the Annual Surveys of Manufactures and a forthcoming volume of revised national income data for 1929 to 1976, here is the cost of purchased fuel and power stated as a proportion of pretax profits:

1978	39.5%
1977	39.9%
1976	37.2%
1975	40.3%
1974	32.9%
1973	24.5%
1972	26.8%
1971	28.6%
1970	31.0%
1969	21.7%
1968	19.0%
1967	19.6%
1966	17.1%
1965	17.5%
1964	20.6%
1963	21.8%
1962	23.7%
1961	25.4%
1960	24.2%
1959	20.9%
1958	25.9%

For types of manufacturing, before and after the 1973 watershed, data limitations require that 1976 be compared with 1967. Here is 1976 energy spending as a proportion of pretax profits.

Primary metals	217.6 %
Glass, brick	113.5 %
Paper	82.8%
Textiles	70.1%
Rubber, plastics	69.1%
Chemicals	62.6%
Food	30.4%
Furniture	27.0%
Wood products	28.6%
Metal products	25.1%
Elec., electronics	21.9%
Clothing	17.3%
Petroleum, coal	16.7%
Miscellaneous	15.2%
Nonelec. mach'ry	14.7%
Motor vehicles	14.3%
Leather	14.2%
Instruments	11.9%
Publications	10.6%
Cigarettes	4.0%

Eleven years earlier (the needed 1966 breakouts aren't available), the same ratios looked like this:

Primary metals	59.0%
Glass, brick	76.6%
Paper	45.1%
Textiles	31.0%
Rubber, plastics	24.5%
Chemicals	27.4%
Food	21.2%
Furniture	14.0%
Wood products	29.4%
Metal products	14.2%
Elec., electronics	9.7%
Clothing	12.5%
Petroleum, coal	11.8%
Miscellaneous	21.9%
Nonelec. mach'ry	8.2%
Motor vehicles	7.2%
Leather	12.4%
Instruments	3.9%
Publications	7.2%
Cigarettes	2.1%

Let me re-emphasis that what we are talking about is a short-term strategy. Once energy prices are fully decontrolled, once ACRS is fully phased in, and once industry has had sufficient time to implement investment programs in response to those energy and tax policies, then we can afford to move away from energy tax incentives. Until that time, however, continuation and improvement of the existing energy tax credit program is critical to our national well-being.

SPECIFIC COMMENTS ON S. 750

As Senator Wallop has indicated, S. 750 was drafted before the Administration's accelerated cost recovery program was enacted While it is apparent to us that the 20 percent credit level called for in S. 750 would provide a significant additional incentive for the covered investments, current budgetary realities are such that it might well be appropriate to consider revising the legislation to provide for a credit at a level of 10 percent as contained in existing law.

Beyond that, we have no other major suggestions for change in the legislation. Obviously, however, there are concepts within the bill which require further development through legislative history.

We are most supportive of the provision in the legislation calling for establishment of a new category of covered investments, termed "qualified industrial energy efficiency property" (QIEEP). Establishment of this category, in addition, of course, to extending the terms for all the credits, is the single most important feature of the legislation. It gets us away from relying entirely on the list approach and allows the inventive genius of American engineering talent to look at a broad range of activities designed to yield process changes resulting in production of products using less energy per unit of output. We suspect that this new section will have the greatest stimulative effect on energy efficient investments of all of the provisions of the legislation.

CONCLUSION

Again, I would like to express my appreciation to the members of this Committee, and especially to you, Senator Wallop, for the leadership you have shown in this area. Mr. Chairman, you have skillfullypursued this concept for over two years, beginning back before we ourselves were involved. Your persistence is greatly appreciated.

We will be happy to do whatever we can to work with you, this Committee and the Treasury Department to assure that any administrative problems with the legislation can be resolved prior to its enactment. We cannot overstate our appreciation for your leadership.

THANK YOU.

ENERGY GROUP

Aluminum Company of America
American Can Company
Ashland Chemical
Container Corporation of America
Kaiser Aluminum & Chemical Corp.
Lone Star Steel Company
Olin Corporation
Owens-Corning Fiberglas
Owens-Illinois
Union Carbide Corporation
Weyerhaeuser Company

STATEMENT OF CLAY POOLE, VICE PRESIDENT, CORPORATE ENERGY, OWENS-CORNING FIBERGLAS

Mr. POOLE. My name is Clay Poole. I am vice president of corporate engineering for Owens-Corning Fiberglas.

Owens-Corning manufactures glass fiber for insulation for industrial, commercial and home use, as well as glass textile fibers which are used in the reinforcements of plastics and other materials. My responsibility includes evaluating the economics and the technical feasibility of energy-conservation projects for our manufacturing plants.

Owens-Corning supports Senate bill 750, both as a large industrial user of energy as well as a manufacturer of insulation designed to conserve energy. The thrust of Senate bill 750 is to encourage U.S. business to invest in energy-conservation projects through the granting of additional investment tax credit.

For Owens-Corning, the goal of energy conservation is of critical importance. We share concern about the transfer over the past decade of hundreds of billions of dollars to the OPEC nations for oil. The result has had an adverse impact on our balance of payments, our inflation rate, our national security and our general standard of living.

The key feature of this bill is to provide an investment tax credit for that portion of capital expenditures which saves oil and gas, without limiting the availability of the credit to a finite list of equipment. Under this approach, our engineers would feel free to apply the full range of their innovative talents to design processes and new types of equipment which would save energy.

At the same time, industry is not simply given a blank check. If the claimed energy saving is not actually achieved, the tax credit will be lost.

I would like to comment on some of the testimony that was given earlier about measurement. A key part of our energy program at Owens-Corning—and I think in most of our industries—is additional metering down to lower sublevels within the process, over and above what we have done in the past, on the theory that, if it isn't measured down to a low enough level of supervisory responsibility, then it simply can't be managed like other resources. Owens-Corning is positioned to take advantage of this key feature. We have organized a task force whose mission is to analyze the energy consumption of our plants. We identify energy-conservation opportunities, recommend innovations in manufacturing processes, and we plan for the design or adaption of new energy-saving equipment.

Projects generated by this task force compete with all other capital requirements in the company. Due to the downturn in housing and in the automotive markets, the availability of funds within Owens-Corning is severely limited. As a result, a significant number of these projects from the energy task force cannot meet the cost justification criteria.

I would like to give you an example of the type of project that I am talking about. Owens-Corning has successfully developed and are about to prototype a method for preheating the glass-batch materials prior to introducing them into a glass-melting furnace, using the heat that is normally exhausted and wasted through the furnace stacks. If our projections are correct, this method could save anywhere from 15 to 25 percent of the energy required to melt glass, which, of course, is the lion's share of the energy we use in that type of an operation.

The enactment of S. 750 will escalate in priority many of these proposals. In light of the lowered tax cost, some of the major proposals will undoubtedly be approved for implementation.

The second feature of the bill is to breathe some life into the current law which would otherwise expire at the end of 1982. The bill extends its effective date to 1986 and gives reasonable meaning to the list of specific equipment designated in section 48L of the code.

In summary, Owens-Corning believes that S. 750 will assist in the achievement of a number of national goals; it is designed to prevent tax revenue loss without a corresponding benefit in the conservation of oil and gas; and it is a necessary incentive to make funds available for these national goals.

Thank you very much.

Senator WALLOP. Thank you.

[The prepared statement follows:]

TESTIMONY OF CLAY A. POOLE

Mr. Chairman, Members of the Committee:

My name is Clay A. Poole. I am Vice-President of Engineering Services for Owens-Corning Fiberglas Corporation. Owens-Corning manufactures glass fiber insulation for industrial, commercial and home use, as well as glass textile fibers which are used in the reinforcement of plastics and other materials. My responsibility includes evaluating the economics and feasibility of energy conservation projects for our manufacturing plants.

Owens-Corning supports Senate Bill 750, both as a large industrial consumer of energy and as a major supplier of industrial insulation used to conserve energy.

The thrust of Senate Bill 750 is to encourage U.S. business to invest in energy conservation projects through the granting of additional investment tax credit.

For Owens-Corning, the goal of energy conservation is of critical importance. We share concern about the transfer over the past decade of hundreds of billions of dollars to OPEC nations for oil. The result has had adverse impact upon our balance of payments, our inflation rate, our national security, and our general standard of living.

The key feature of the bill is to provide an investment tax credit for that portion of capital expenditures which save oil and gas without limiting the availability of the credit to a finite list of equipment. Under this approach, our engineers would feel free to apply the full range of their innovative talents to design process changes and new types of equipment which save energy. At the same time, industry is not simply given a blank check; if the claimed energy saving is not actually achieved, the tax credit will be lost.

Owens-Corning is positioned to take advantage of this key feature. We have organized a task force, whose mission is to analyze the energy consumption of our plants. They identify energy conservation opportunities, recommend renovations in manufacturing processes, and plan for the design or adaptation of new energy saving equipment.

The projects generated by this task force compete for capital funds with all other capital requirements of the company. Due to the downturn in the housing and automotive markets, the availability of funds within Owens-Corning is limited. As a result, a significant number of projects from the energy task force can not meet cost justification criteria.

I want to give you an example of the kind of project I am talking about. We have developed and are about to prototype a process by which we use normally wasted energy from the glass furnace stack to preheat glass batch materials prior to their introduction into the furnace. The indications are that 20% to 30% of the energy required to melt the glass will be saved.

The enactment of S.750 will escalate in priority many of these proposals. In light of a lowered tax cost, some of the proposals would undoubtedly be approved for implementation.

I also want to comment about the issue of industry's ability to measure and verify the results of energy conservation projects. An important part of Owens-Corning's energy conservation program is additional metering. Energy usage can be better managed if it is metered down to the lowest practical level of supervision. It will greatly enhance our ability to measure results of energy conservation projects. Other industry managers that I have talked with are taking a similar approach.

The second feature of the bill is to breath some life into current law which would otherwise expire at the end of 1982. The bill extends its effective date to 1986 and also gives reasonable meaning to the list of specific equipment designated in Section 48(1) of the Code as eligible for the investment credit.

In summary, Owens-Corning believes that S.750(1) will assist in the achievement of a number of national goals, (2) is designed to prevent tax revenue loss without a corresponding benefit in the conservation of oil and gas, and (3) is a necessary incentive to make funds available for these national goals.

STATEMENT OF RONALD RICHART, DIRECTOR OF ENERGY AND TRANSPORTATION POLICY FOR UNION CARBIDE CORP.

Mr. RICHART. I am Ronald Richart, director of energy and transportation policy for Union Carbide Corp. I am pleased with the opportunity to give our views on, particularly, S. 750 and, more generally, on the place of conservation in the national energy policy.

I wish to commend you, sir, for introducing this bill. Creation of QIEEP, qualified industrial energy efficiency property, clearly recognizes that our greatest energy-saving opportunities lie in innovative process changes. And it complements specially defined energy property which is applicable to the simpler energy-savings projects.

Polyethylene is the most widely used, produced, largest-volume plastic material in the world, familiar to all of us in many forms. Union Carbide has developed and is licensing an improved process for the manufacture of polyethylene. This is called the Unipol Process, and it is revolutionary. It operates at low pressures and temperatures and uses 75 percent less energy than conventional high-pressure processes per unit of output. In addition, the plastic produced is stronger, weight-for-weight, than conventional polyethylene. If all this country's obsolete capacity were replaced by the Unipol Process, the savings in barrels of oil equivalent would equal 1 day's input into the United States; so, about 6 million barrels of oil a year.

Under Senator Wallop's proposal, there will be an increased incentive to replace existing polyethylene facilities with Unipol on the same sites. And continuing to use existing sites is clearly a benefit to established communities and minimizes environmental concerns associated with new green field's plants.

We sincerely believe that energy conservation, or, more accurately, the more efficient use of energy, must be recognized in a well-considered, rounded national energy policy. While we do not quarrel with the concept of encouraging energy supply, it is very clear that addressing energy productivity will yield larger benefits to the Nation more quickly and more cheaply than any other approach.

I have attached to my testimony Xeroxes of a couple of pages from the recent Exxon report, "Energy Outlook, 1980 to the Year 2000." I think you have it there. If you examine that, you observe that conservation, the avoidance of the use of petroleum, is by far the largest factor in their forecast of oil demand by the year 2000, compared with pre-1973 trends. That section at the top represents 47 percent of the total. It is a 47-percent reduction in the pre-1973 trend line in oil demand. Evaluation of our own individual opportunities in Union Carbide to conserve, to use energy more efficiently, lends credence to Exxon's estimate. While, as a corporation, our goal is a 30-percent reduction used per pound of product compared with the 1972 base line, by 1985 we are sure we can do better than that if cash flow permitted funding of all of the opportunities we see. The key is capital formation. And the energy tax credits as described in your bill will add to that and promote greater commitment in the near term to this particular category of investment. And, as has been pointed out by earlier witnesses, the real benefit of this approach is accelerated investment and quicker results.

Thank you.

[The prepared statement follows:]

TESTIMONY BY UNION CARBIDE CORP.

STATEMENT TO SENATE FINANCE COMMITTEE ON ENERGY TAX CREDITS

The processes that Union Carbide employs to manufacture chemicals and plastics, industrial gases, graphite electrodes, and other products are very energy intensive. We spend almost a billion dollars a year for energy and are, therefore, committed to using energy as efficiently as we can.

For that reason, we have had a Corporate - a worldwide - energy conservation program for over seven years. This has been a successful effort and we now use almost 22% less energy per unit of output than we did in 1972. Performance of individual divisions varies from 12 to over 30 per cent improvement, not because of differing commitments to energy conservation but because the opportunities for saving vary considerably by process.

Several years ago we established a corporate goal of a 30% savings in 1985, as compared to the base year 1972, and we will make that goal.

As good as this performance is, and we are proud of it, this program has been limited by availability of capital funds. This year we will spend about 40 million dollars on retrofits alone for energy conservation but, unfortunately, there were additional savings opportunities we were not able to fund.

Our problem is not in our commitment to using energy ever more efficiently but with capital formation. The funds we generate from profits and depreciation, coupled with prudent borrowing, are not adequate for all worthy projects. Capital is required for environmental protection, health and safety, new capacity to maintain market shares, new products to maintain the long-term viability of the business, and cost reduction. Unfortunately, forced choices have to be made and cost reduction is more easily deferred than are many of the other needs for capital funds.

You may ask, won't the Accelerated Cost Recovery that you provided in this year's tax legislation help or obviate the need for Energy Tax Credits. Yes, the ACR will be of major capital formation assistance and we are very happy that it was enacted, but it is phased in over five years and we don't get the full benefit until 1985. I would like to point out that energy conservation investments are of a catch-up nature, rather than replacement or renewal investments, and require supplemental cash flow.

Energy Conservation investments are very important to us - to maintain our competitive capabilities - and we will continue to make them, but not as rapidly as we would like because of these capital limitations. There is no question that a tax credit, which is available for only a limited time, is a definite and useful incentive for corporations to make energy conservation investments sooner rather than later.

We believe strongly that it's not only in our own interest but in the national interest that these energy conserving investments be made more rapidly than they would be otherwise. They are the quickest, most reliable, and economically satisfactory source of added energy supply for the nation. The impetus given to this investment by targeted tax benefits is greater than the impact of the additional funds alone - it is a psychological boost to the hundreds of engineers involved in our plants to find more useful projects because they are not only in UCC's but the national interest.

I wish to commend Senator Wallop for introducing Senate Bill 750. Creation of Qualified Industrial Energy Property clearly recognizes that our greatest energy saving opportunities lie in innovative process changes and it complements Specially Defined Energy Property which is applicable to the simpler energy savings projects.

Polyethylene is the most widely produced largest volume plastic material in the world, familiar to all of us in many forms. Union Carbide has developed and is licensing an improved process for manufacture of polyethylene. This Unipol process is revolutionary. It operates at low pressures and temperatures, and uses 25% as much energy as conventional high pressure processes. In addition the plastic produced is stronger, weight for weight, than conventional polyethylene. If all of this country's obsolete capacity were replaced by the Unipol process the savings in barrels of oil equivalent would equal one day's imports into the U.S., or about 5-6 million barrels of oil per year. Under Senator Wallop's proposal there will be an increased incentive to replace existing polyethylene facilities with Unipol on the same sites - and continuing to use existent sites is clearly of benefit to established communities, and minimizes environmental concerns associated with new greenfield plants.

We sincerely believe that Energy Conservation - or more accurately - the more efficient use of energy - must be recognized in a well considered, rounded ~~natural~~ NATIONAL energy policy. While we do not quarrel with the concept of encouraging energy supply, it is very clear addressing energy productivity will yield larger benefits to the nation, more quickly and cheaply than any other approach.

One has only to examine the recent Exxon publication, "ENERGY OUTLOOK - 1980-2000" to observe that "Conservation" - the avoidance of the use of petroleum - is by far the largest factor in their forecast of oil demand by the year 2000, compared with pre-1973 trends. (See attached) By the year 2000 the "Conservation" sector amounts to a 47% reduction from the pre-1973 trend line in oil demand.

Evaluation of our own individual opportunities to conserve - to use energy more efficiently - lends credence to Exxon's estimate. While as a corporation our goal is a 30% reduction in energy use per pound of product compared with 1972 by 1985, we are sure we can do better than that if cash flow permitted funding of the opportunities we see.

The key is capital formation - and the energy tax credits as described in Senator Wallop's bill will add to that and promote greater commitment in the near term to this particular category of investment.

EXXON COMPANY, U.S.A.'s Energy Outlook 1980-2000

U.S. Oil Demand

Oil demand declines over the Outlook period, principally because of conservation and the substitution of other fuels in end uses where oil has historically been consumed. Oil remains the critical fuel because of its versatility and economic and technical limitations on the use of other fuels.

Oil **Conservation** is already occurring and is expected to accelerate over the forecast period. A major contributor to conservation is increased automobile efficiency. Current law mandates an improvement in new automobile gasoline mileage of about one-third by 1985 relative to the automobiles sold in 1980. This Outlook assumes that further technological development will increase automobile efficiency significantly by 2000.

Like conservation, **Substitution** is a relatively recent phenomenon. Prior to the Arab oil embargo of 1973-74, there was little incentive to substitute other energy sources for oil. In the last decade, however, the twin concerns of price and availability of supplies have brought about increasing substitution for oil. By the year 2000, only 8% of oil demand will be for uses in which other energy sources could readily be substituted.

In the **Residential/Commercial** area, conservation and substitution combined will halve oil consumption by 2000. Conservation steps include additional insulation, more efficient furnaces, and lower thermostat settings. Additionally, electricity, gas, and solar will increasingly be used for space and water heating.

Demand by Sector (MMB/D)

	1960	1980	1990	2000
Transp.	5.4	9.4	9.1	9.3
Nonenergy	0.8	2.2	2.7	2.9
Industrial	1.3	2.1	2.1	1.8
Electricity	0.2	1.1	0.7	0.4
Res./Comm.	2.1	2.1	1.6	0.9
Exports/ Other	0.2	0.6	0.6	0.6
Total	10.0	17.6	16.8	15.9

Another large area of potential substitution for oil is **Electricity** generation. Presently, two-thirds of oil consumption in this sector occurs in base-load operations, for which coal and nuclear energy are economic alternatives. As a result of substitution of coal and nuclear, by 2000 essentially all of the oil consumed will be for intermittent operation, where coal and nuclear are not practical.

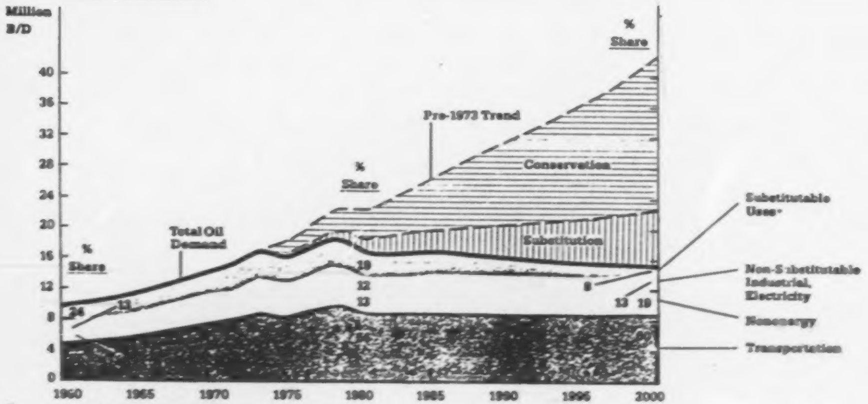
In the **Industrial** sector, coal and electricity will replace oil where feasible. Certain industrial uses, such as off-highway vehicles and small boilers for which gas is unavailable, will still require oil. Substitution and conservation combined will reduce oil use slightly over this period, even though projected economic growth will increase industrial energy demand by 43%.

Large-scale substitution for oil in **Transportation** is not practical for economic and technological reasons. The most likely form of substitution will be electricity. Electric automobiles and light trucks with a limited range are projected to be introduced into the market in the mid-1980s and to increase their penetration to 10% of new car and light truck sales in 2000. There will also be a growing use of electricity by railroads. Nevertheless, in 2000, 99% of the energy requirements of this sector are estimated to be met by oil.

Substitution is also limited in the **Nonenergy** sector. While there is the potential to substitute natural or synthetic gas in the manufacture of petrochemicals, oil use (including natural gas liquids) in this sector is expected to increase as a result of economic growth.

In sum, by the end of the century, nearly all economically and technologically feasible conservation and substitution steps will have been taken. This will permit economic growth to occur even as oil consumption declines. Nonetheless, oil demand will be only 9% lower than it is today.

U.S. Oil Demand



* Industrial, Residential/Commercial, Electricity

Senator **Wallop**. I would like to play the devil's advocate here for a minute and inquire of all three of you, and especially Mr. Richart, why wouldn't market forces trigger a sort of mass move to your new process, just for competitive reasons alone?

Mr. **Richart**. Well, I think they will, no question about it. We have just started up a plan based on this process, and one of our major competitors has licensed it, and other licenses will go ahead. I see two benefits in it, though. Because it is such a significant energy-saver and would enjoy, under your concept, some additional credit, people who are confronting the problem that their old, existing, inefficient capacity costs so much less to build per pound than does any new construction—the inflation in new construction is involved here—they will have a greater incentive to invest more quickly. Second, they will have an incentive to replace their facilities in the present plantsite, because that is, of course, a restriction in the bill. And I think that is an important point to consider.

Senator **Wallop**. Mr. Singer.

Mr. **Singer**. I pointed out in my testimony, Senator Wallop, that acceleration is the main feature of this bill, as far as our company is concerned. We have got that billion and a billion and a half that we should spend. We will spend more of it, should your bill be passed and if we have this deadline of 1986 or 1987, whatever it turns out to be. And I think that there is no question that we can document that we accelerated some of our projects as a result of the last bill.

The problem with the last bill, as you pointed out, it was a list. And many of the things that were most productive from an energy efficient standpoint weren't on the list, because they were process innovations. And that is why I think your QIEEP is a very important feature and should not in any case be discarded.

Senator **Wallop**. What do you think about lists? Would any of you care to comment on it? It bothers me that we have one.

Mr. **Singer**. Well, for simplicity it is kind of nice to have a list, if it happens to be on there. I don't think that this should be——

Senator **Wallop**. That is what bothers me. If it doesn't happen to be on there, then we——

Mr. **Singer**. Stew, would you care to make a comment on that?

Mr. **Van Scoyoc**. Yes. The comment I was going to make was, if you represent people in Washington, the list approach is a very nice way to do business. It helps business in Washington quite a bit. I am not sure it is a very good policy for the country.

Senator **Wallop**. I think, not only in energy but certainly in the environmental world, Congress, upon creating lists, does much to discourage the creative ingenuity of America. In the environmental world, it seems to me, the national purpose is the environmental goal, and how anybody gets there is up to them as long as it achieves that goal. But we seem bound and determined to create by law not only the goal but the means of getting there.

Mr. **Van Scoyoc**. If I can harken back to some environmental experience I had, that was the big complaint that the engineering people that I used to work with had about the environmental laws. They were so prescriptive in their content that it was all of this sort of hang-on equipment at the end of a plantsite or at the end of an automobile tailpipe. And, really, the engineering talent that you had out in the private sector did not have the opportunity to use their talents to the fullest ability. They were so much restricted by this list kind of approach in the environmental area, and I think it would carry over to the same thoughts in the energy area.

Senator **Wallop**. What would happen, then, tailoring this legislation, if we would change when the credit was available from on the commitment to purchase and install the energy-saving equipment to after the savings had been demonstrated? You know, there is a question as to when you adjust that, if it doesn't create the savings to their forecast.

Mr. **Singer**. Well, I will make a comment, and then maybe some of my colleagues would add to it. Certainly, the further you extend that, the more you discount the value of the additional incentive and, therefore, diminish the effectiveness of what we are trying to do, which is to accelerate the energy-conservation projects. And some of the really big ones that are going to save the most energy are projects that are going to take 2, 3, or 4 years to produce and then get onstream. And if you wait out to the end of all that period, the value of that credit has come down very, very much. And if you were going to do something like that, I would like to withdraw my remarks about saying that we should reconsider the 20 percent and go down to the 10, because you are going to take away the incentive that is needed here to achieve acceleration.

Senator **Wallop**. But what would happen if we approached it from a different standpoint and said that if it did not achieve the forecast saving, that there would be some interest penalty on the use of the Federal dollars in the interim?

Mr. **Van Scoyoc**. Just to comment on that, and this came up fairly recently, the IRS has changed their treatment of underpayment of taxes; so, the way the bill is now drafted, you would in effect have a very substantial interest penalty if you overestimated your energy savings. As I understand the way the bill is drafted now, you come back and do a recomputation period within 18 months after placing the investment in service. If you find that you are not qualified for all of the credit that you took, that is essentially an underpayment of taxes, and you pay the prime rate of interest on that money.

Senator **Wallop**. Well, I thank you all for taking the time to come here. We need your continued support, as you can obviously surmise by what has taken place today, and we will continue to work on it.

Mr. **Van Scoyoc**. If I may make just one comment, very quickly, on the revenue estimates. You did ask the previous panel about that. I think I can probably fairly safely say for this group that, No. 1 we don't believe the estimates we saw this morning. That was the first time we had seen them.

You had been in the revenue-estimating game, I think, when the Kennedy amendment was on the Senate floor. The estimates that we had at that time, for that proposal, which included several residential features—these came from the Joint Tax Committee—the commercial features were $1.2 to $1.4 billion. I think I can also say, given the opportunity to modify those comments at a later date, I don't think the group that we represent here is very anxious to support a proposal if it is going to cost $5 billion, and we would be anxious to work with people to define those and see what makes sense and what doesn't.

Senator **Wallop**. Well, we have our commitment, as I gather you heard, of that ability, and I would appreciate it.

Thank you all very much.

The next panel consists of George L. Cobb, vice president of supply, Pittsburgh Plate Glass Industries, Pittsburgh, Pa.; Gerald W. Houck, director of energy and critical material, American Iron and Steel Institute, Washington; Terry Gallagher, chairman of the board of American Petroleum Refiners Association and president of Asamera Oil, Inc., representing the American Petroleum Refiners Association of Washington; Dennis Bedell, Chairman of the American Mining Congress Tax Committee, Washington, D.C.

Would you please come forward and proceed, gentlemen.

STATEMENT OF GEORGE L. COBB, VICE PRESIDENT OF SUPPLY, PPG INDUSTRIES, INC., PITTSBURGH, PA.

Mr. **Cobb**. Thank you, Mr. Chairman. My name is George L. Cobb, vice president of supply for PPG Industries. My responsibilities include the development of the energy policy and the management of the energy supply. I appreciate this opportunity to present PPG's views and request that PPG's written statement, as previously submitted, be included for the record.

Senator **Wallop**. It will be.

Mr. **Cobb**. Thank you. PPG is a major manufacturer of glass, chemicals, coatings and resins, and Fiberglas. It employs some 28,000 people domestically in 41 manufacturing and research facilities in 17 States. PPG is a substantial user of all forms of energy in its manufacturing process. In 1980 it consumed 105 trillion Btu's of energy. This was down from 1976 consumption of 139 trillion Btu's. Overall, the corporation has improved its energy efficiency by more than 23 percent since 1972, while increasing production in sales. This process has been achieved in many ways, including substantial investment in energy-saving technology.

PPG spent approximately $186 million for energy in 1980. This represents some 5 to 7 percent of the company's total sales dollar. The point here being that competition for corporate investment dollars, energy-saving projects, or other types of investment, is considered in light of the ultimate cost to the corporation. Therefore, the blind pursuit of energy conservation for conservation's sake is a luxury PPG, and I suspect most companies, cannot afford in their highly competitive markets.

The use of tax credits to stimulate investment in energy-saving modernization as contained in the legislation before this subcommittee is a proven, effective way of improving energy efficiency. The result is less dependence on foreign oil.

Congress recognized the value of energy tax credits when it enacted the Energy Tax Act of 1978 with the emphasis on industry spending more money and spending it sooner. The act also provided a basis for insuring that industry would receive equal treatment, either as defined in the statute or under the Secretary of Treasury's authority to qualify additional energy property. To date the Secretary has not qualified any additional energy property, nor has the Treasury acted as intended by Congress to issue regulations defining types of property that qualify as a guideline for applying for specification.

Industry still has no clear-cut signal that management can use to make energy-saving investment decisions. The positive results of the 1978 act envisioned by Congress simply have not occurred. One exception to this is the modification of alumina electrolytic cells. I would point out that the addition of that energy-saving technology for the aluminum industry, as an amendment to the 1980 Windfall Profit Tax Act, was the result of legislative action, not the authority as originally granted to the Secretary of Treasury.

PPG has requested from Treasury a listing of its electrolytic cell technology as qualified energy property. The technology is a component of our chlorine and caustic soda process, is presently being installed at one of our chlorine plants and is almost identical to the alumina electrolytic cell process which was specified by an amendment in the 1980 Windfall Profit Tax Act. To date no ruling on PPG's project has been forthcoming from Treasury. The current PPG project at this facility represents an investment of more than $100 million. We anticipate this modernization project will result in approximately a 25-percent reduction in energy usage and conserve the equivalent of more than 400,000 barrels of oil per year. Without a favorable ruling or legislative action and the extension of the time to qualify property beyond December 31, 1982, the current project will be denied the tax credit anticipated when it was funded.

Also, the installation of electrolytic cell technology at PPG's other facilities may give way to other corporate investments for several years to come.

PPG supports the energy tax credit concepts in both bills as well as the January 1, 1981, effective date. The addition of qualified energy-efficient property based on energy savings contained in Senate bill 750 allows the industry to identify qualified projects under the energy tax credit system. We also believe the 4-year extension of the time for qualifying expenditures is a necessary incentive to encourage investment by industry to conserve energy.

As we understand S. 750, PPG's current project and similar modifications of other company facilities after December 31, 1980, would be treated equally with other energy property such as the legislatively qualified alumina electrolytic cells.

Simply stated, we believe that the bill provides taxpayer equity based on energy conservation performance, irrespective of the uniqueness of the industry. PPG sincerely appreciates this opportunity to testify. I would be happy to try and answer any of your questions.

Accompanying me today are PPG specialists from our tax and energy supply department who may be helpful in responding to your questions.

Thank you.

Senator **Wallop**. Thank you very much, Mr. Cobb.

[The statement follows:]

STATEMENT OF GEORGE L. COBB, VICE PRESIDENT, SUPPLY, PPG INDUSTRIES, INC.

INTRODUCTION

Mr. Chairman and Members of the Subcommittee, my name is George L. Cobb, Vice President, Supply for PPG Industries, Inc. Included in my responsibility is the development of energy policies and management of energy supplies. PPG sincerely appreciates the opportunity to express its views in support of the energy tax credit concepts embodied in S.750, the Industrial Energy Security Tax Incentives Act of 1981 and S.1288, the Commercial Business Energy Tax Credit Act of 1981.

PPG is a major manufacturer of glass, chemicals, coatings and resins, and fiberglass products headquartered in Pittsburgh, Pa. The company operates in the United States, 41 major manufacturing and research facilities in 17 states, employing some 28,000 people. As an industrial manufacturer, for which energy is a substantial portion of our operating needs and costs, we have a great interest in energy tax legislation which will encourage investment in property reducing the energy consumed in our existing industrial processes.

Energy Usage

In 1980, PPG consumed about 105 trillion BTU's of energy in the manufacture of its products, down from a 1976 total of 139 trillion BTU's. In 1980 our energy efficiency as a corporation had improved more than 23 percent compared to 1972. The primary reason for this reduction of absolute energy consumption and marked improvement in efficiency was based on two major factors, energy cost and the marketplace. The cost increases PPG has faced over the years have been the same or greater than those experienced by the general public.

While energy is a substantial cost item to PPG (in 1980 it totaled about $186 million), it is not our only cost and represents some five to seven percent of total sales dollars. Therefore, although energy costs have soared and are expected to increase further, they are still only one important cost item among many. Within a corporation, competition for the capital expenditure dollar requires management to consider the ultimate cost. As such, the blind pursuit of energy conservation for conservation's sake is a luxury we cannot afford to pursue in our highly competitive markets.

Value of Tax Credits

The use of tax credits as an incentive to stimulate the modernization of industrial processes used by industry, is a concept that is well established in our tax system. The use of tax credits were first approved by Congress as part of the 1962 Tax Reform Act. The Tax Reform Act of 1969 repealed the use of credits. However, the Revenue Act of 1971 reinstituted the tax credit system as incentive for investment in the modernization of industrial processes.

The continued use of the tax credit system, its expansion through energy tax credits and current credits for research and development, indicate the effectiveness of the credit system in encouraging industrial investment. The two bills currently before the Subcommittee present a proven, effective way of encouraging industry to promote energy efficiency in their plants, thereby reducing dependence on foreign oil. The proposed legislation amending our current energy tax credit system, would provide industry with incentives to modernize its currently inefficient energy processes.

Congress recognized the problems of industry when it enacted legislation in 1978 to provide incentives to encourage industrial energy conservation. It realized that the energy marketplace, with its myriad of price controls, was not sending the proper price signals to consumers, and, therefore, offered an incentive to reduce U.S. dependence on foreign oil supplies and bring energy supply and demand into balance. The incentive provided industry with a tax credit to install certain specified items which would reduce energy consumption.

The concept was clear. Given the incentive, industry would spend more funds sooner to reduce its energy dependence. The emphasis was on more and sooner, for given the importance of energy supply and the rising cost of energy, there is little doubt that the funds would be spent eventually. The benefit of spending more sooner, however, was clear to Congress. Energy savings would be realized on an accelerated schedule, thereby reducing oil imports, and inflationary pressures resulting from increasing energy prices. Congress was correct in its wisdom in enacting the Energy Tax Act of 1978.

Current Energy Tax Law

The Energy Tax Act of 1978 included a tax credit for specifically defined energy property. The defined property included a list of 11 specified items in addition to authority given to the Secretary of Treasury to specify additional qualifying property. To date the Secretary has not qualified any additional property. The Crude Oil Windfall Profits Tax Act of 1980 added "modifications to alumina electrolytic cells" to the list of specifically defined energy property. It appears that this property was added legislatively as a result of the Treasury's failure to act under its discretionary authority in the 1978 Act.

Under the legislation, Congress considered three main factors. First, they put a limit on the number and types of expenditures that would qualify for the credits. Secondly, focusing on achieving energy savings quickly, a short time period was imposed for realizing the incentive and, thirdly, they limited the incentive to a relatively conservative 10 percent tax credit. Unfortunately, the favorable results anticipated by Congress have not been fully realized to date. For example, PPG has received only about $325,000 worth of credits through 1980. There is a reason for this problem.

Under the current law, expenditures for specifically defined items will not qualify for the energy tax credit unless and until the Secretary designates them through regulations, or separate legislation involving the particular energy-saving expenditure is passed, as was required for the alumina electrolytic cell. Unfortunately, to date, the Secretary has not exercised his authority to issue regulations defining what types of property qualify or how to apply for specification, which was the intent of Congress. The problem is further complicated by an expenditure deadline of December 31, 1982. The lack of guidelines as to what qualifies, coupled with the approaching deadline gives industry no real signals for making major energy-saving expenditure decisions. In the competition for investment capital, energy saving projects are competing with other investment opportunities. Management must receive clear signals on what tax credits will or will not be available in order to make these judgments.

PPG's Experience/Regulatory Delay

It is our understanding that the Secretary has stated that no additional specifications will be designated until final regulations are published. A chronology of events puts the significance of this statement into perspective. On January 7, 1981, two years after the legislation was signed into law, the first proposed regulations addressing the ability to specify additional items were published for comment. On April 30, 1981, PPG testified at a Treasury Department hearing regarding the proposed regulations.

The testimony emphasized the inadequacy of the regulations as they related to industrial processes, the intent of Congress, the Energy Tax Act of 1978, and modifications thereto under the Windfall Profits Tax Act of 1980. As of this date, no new or amended regulations have been proposed regarding guidance for specifying additional industrial property under the Energy Tax Act.

Because the time period for qualified expenditures runs out on December 31, 1982, and lead time is required to develop a project and modify processes, the publication of regulations at this time would still not allow industry to effectively utilize the tax incentive intended by Congress.

A PPG Energy Saving Project

An example of the unworkable situation facing industry is PPG Industries, Inc.'s modernization program for certain chemical processes. PPG has requested, through a ruling submission to the Treasury Department, a listing of this process modernization as a specified item under the 1978 Energy Tax Act. Although the project, an electrolytic cell, is nearly identical in technology to the modification of alumina electrolytic cells which Congress specified under the 1980 Windfall Profits Tax Act, no ruling on PPG's project has been forthcoming. Considering the fact that the current project will not be completed by the December 31, 1982 cut-off date, and the company's desire to install this technology in other plants, the current circumstances preclude PPG from knowing whether or not the existing project or further use of the technology will qualify under the Energy Tax Act. The current project, which represents a single expenditure at one plant of more than $100 million, would benefit PPG and the nation by saving in excess of 400,000 barrels of oil per year, or an estimated 25 percent reduction in energy usage. However, without a favorable Treasury Department ruling, or legislative action to specifically qualify the electrolytic cell, and a bill extending the time to qualify for a credit, the project will be denied the tax credits which were anticipated when it was funded. In addition, further installation of this technology at other PPG plants may give way to less risky corporate expenditures for several years.

The electrolytic cell is a component of the chlorine and caustic soda production process of PPG. In the manufacture of these products, energy costs represent a major operating expense, in some cases as much as forty percent. We presently have chlorine and caustic soda production facilities in Ohio, West Virginia, and Louisiana. We formerly operated a facility in Texas, which was closed when energy costs skyrocketed by a factor of twelve in the early 1970's. The old technology plus the energy cost simply rendered the Texas plant non-competitive. Our remaining plants with somewhat newer technology survived in large part because the marketplace accepted the energy cost pass throughs and because substantial amounts of capital were invested to improve the facilities' efficiency.

PPG Position/Recommended Action

PPG supports the energy tax credit concepts in S.750 and S.1288. If the energy marketplace were free of all price controls, we believe that adequate incentives would exist to allow energy conservation projects to compete on an equal basis with other investment opportunities. This is not the situation before us. Therefore, we find it appropriate for Congress, who prescribed gas price controls through 1985 and beyond, to correct this distortion by maintaining an effective, efficient incentive in the form of tax credits to encourage energy conservation.

The addition of qualified energy efficient property based on energy savings contained in S.750 allows industry a more definite method of identifying those projects that would qualify under the energy tax credit system. As a project for the modernization of processes in industry requires not only lead time but also extended construction periods, the additional four year extension of time for qualifying expenditures provided by both bills being discussed today by the Subcommittee, must be considered a necessary part of any incentive to encourage industry to move toward more energy efficient facilities. With the restrictive definitions in the law and lack of guidance by regulations under the statute, energy tax credits are not currently available to industry as an incentive to modernize energy inefficient facilities. Without this legislation, the energy saving benefits Congress intended to be generated by the industrial community will not occur.

Therefore, the definitions and extended time for qualifying expenditures suggested in the legislation are critically needed to complete Congressional intent in the 1978 Energy Tax Act, and as reemphasized in the Windfall Profits Tax Act of 1980.

Although the specification of modernization of alumina electrolytic cells was made retroactive to 1978, and the fact that expenditures were made on PPG's current electrolytic cell project during 1980, we support the legislation's effective date of January 1, 1981. It is our understanding that provisions in S.750 regarding the addition of qualified energy efficient property based on energy savings would enable PPG's current project and similar modifications at other facilities after December 31, 1980, to be treated equally with other energy properties such as the legislatively qualified alumina electrolytic cells, a similar technology used in the aluminum industry. We feel the language also provides generally for taxpayer equity based on energy saving performance irrespective of the uniqueness of an industry.

STATEMENT OF GERALD W. HOUCK, JR., DIRECTOR OF ENERGY AND CRITICAL MATERIALS, AMERICAN IRON AND STEEL INSTITUTE, WASHINGTON, D.C.

Mr. HOUCK. My name is Gerald Houck, Jr., and I am director of energy and critical materials of the American Iron and Steel Institute, which I will refer to as AISI. I am appearing today on behalf of AISI to testify in support of S. 750.

The 65 domestic member companies of AISI are involved in all aspects of the iron and steel industry. AISI member companies account for about 91 percent of the raw steel made in the United States and employ approximately 400,000 people.

The steel industry is one of the Nation's largest energy consumers. Within the industry there are substantial opportunities to save energy through energy conservation, waste utilization and the increased use of advanced steelmaking technology. There are also opportunities to substitute coal or coal-derived energy for natural gas or oil. As this committee again begins to consider legislation to provide tax incentives for energy conservation and the development of alternative sources of energy, careful consideration should be given to the need for incentives to encourage those investments which will reduce energy consumption in the steel industry.

S. 750 would extend the energy tax credits to a wide spectrum of investments which conserve energy in addition to a specifically enumerated list of items of equipment, as is the practice under current law. Accordingly, it would provide a significant incentive for energy-related investments which cannot be specified on a particular list of qualifying property.

The utilization of energy in the steel industry involves a vast number of processes and a wide variety of fuels. AISI will supplement this testimony with additional written comments and recommendations pointing out the special impact of certain provisions of S. 750 on the steel industry.

AISI endorses the efforts of Senators Wallop, Durenberger, and the other members of this committee to preserve and expand the energy tax credit. When combined with other incentives for capital formation, the energy tax credits proposed under S. 750 would provide a stimulus for energy conservation in all segments of American industry, including the iron and steel industry.

SUPPLEMENTARY STATEMENT OF THE AMERICAN IRON AND STEEL INSTITUTE ON S. 750

This statement is submitted by the American Iron and Steel Institute for inclusion in the Finance Committee's record of the hearings on S. 750--the Industrial Energy Security Tax Incentives Act of 1981. At the hearings which were held last week, the American Iron and Steel Institute (AISI) endorsed the Finance Committee's efforts to preserve and expand the energy tax credit. It believes the energy tax credits and other tax incentives are necessary for an effective energy policy. However, it was noted in AISI's testimony that there are several technical changes which would improve the incentive effect of S. 750 on industry in general, and on the iron and steel industry in particular.

GENERAL RULES

Replacement equipment: Under S. 750, the energy tax credit would not be available with respect to qualified industrial energy efficiency property or other items of energy property which replace existing property if the replaced property is not retired from service (except for temporary use while the replacement equipment is inoperable). However, there are circumstances under which, notwithstanding the installation of energy saving equipment to replace some of the functions of the equipment at an existing facility, it may not be possible to completely retire the existing equipment. For example, it may be nessary to continue to use the existing equipment because the replacement equipment does not have as much capacity as the existing equipment, or because it cannot be used to make all of the products that were made by the existing equipment. Because the retirement rule is extremely broad, it could deny the energy tax credit to certain items of replacement equipment which would otherwise qualify for the credit.

Continuous casters are an example of the kind of energy saving equipment in the steel industry which could be adversely affected by the replacement rule. Continuous casters process molten steel into semi-finished products in a single operation. They replace a number of energy consuming steel processes, including soaking pits and primary breakdown mills. It has been estimated that continuous casting results in energy savings of as much as 3 million BTU's per ton of steel cast--the equivalent of more than 1/2 barrel of oil per ton. This represents almost 10 percent of the total energy used to make finished steel products. However, continuous casters cannot be used for all grades of steel. Moreover, a single continuous caster may not be able to process all of the hot metal that was previously processed by the steel mill's ingot casting and rolling equipment. Accordingly, even if a continuous caster is installed at an existing mill, it may be necessary to continue to use the existing equipment for a portion of the mill's output.

Under the replacement rule, continuous casters and other items of replacement equipment which would otherwise be eligible for the energy tax credit but which cannot completely replace the existing equipment at a facility could be ineligible for the credit. This would substantially diminish the impact of the credits on precisely those investments that they are designed to encourage. Because of its potentially exclusionary impact, this test should be clarified to indicate that it does not apply to the situation described above, or should be dropped entirely from S. 750. AISI would be pleased to provide specific clarifying language for this provision.

Increased capacity: S. 750 provides that the energy tax credit for qualified industrial energy efficiency property is to be reduced if the property increases the capacity of the existing process, processes, or facility in connection with which it is installed. This rule does not apply if the capacity increase is less than ten percent, or if the capacity increase results from reductions in intermediate or finished product waste. A similar rule, in the form of the "incremental cost rule," would apply to other items of energy property. Like the replacement rule discussed above, this rule could have the unintended effect of denying the full energy tax credit for certain types of energy conserving equipment which should qualify for the credit.

Continuous casters are also an example of the kind of energy saving equipment that could be affected by this rule. The installation of a continuous caster would not necessarily increase the overall capacity of a steel mill, even if the existing ingot casting and rolling equipment remains in use. The mill's overall capacity would continue to be limited by the capacity of preceding stages in the steel making process (such as the mill's hot metal capacity) or by the capacity of subsequent stages (such as the mill's finishing capacity). Nevertheless, if the existing ingot casting equipment is not replaced, the installation of a continuous caster would increase the theoretical capacity of the casting portion of the mill. As currently proposed, the increased capacity rules could result in a partial loss of credits for such a continuous caster, even though its installation does not increase the overall productive capacity of the steel mill. Accordingly, as with the retirement rule, the increased capacity rule should either be clarified to provide that it does not apply under these circumstances, or should be deleted from S. 750. AISI would be pleased to provide specific clarifying language for this provision as well.

QUALIFIED INDUSTRIAL ENERGY EFFICIENCY PROPERTY

Calculation of energy savings: S. 750 provides that, for purposes of determining whether an item of equipment is qualified industrial energy efficiency property, energy savings that result from "substantial changes in the character of either the output or input of the facility" will be disregarded. This is an ambiguous provision, and should either be defined more carefully or should be deleted from the bill. Otherwise, in the hands of the administering agency, this provision could be used to substantially diminish the incentive effect of the credit for qualified industrial energy efficiency property.

Sixty dollar per B.O.E. ceiling: The credit for qualified industrial energy efficiency property is subject to a maximum of sixty dollars per barrel of oil equivalent saved by the property. AISI recommends that this maximum figure be adjusted periodically to offset the effect of inflation on the cost of energy and energy related investments. Otherwise, even though the credits provided by S. 750 will in some cases by available through 1994, the fixed sixty dollar per B.O.E. limit could render the credit meaningless for capital intensive energy conserving projects long before that date.

ALTERNATIVE ENERGY PROPERTY

Definition of alternate substance: The alternative energy property category generally consists of equipment which uses an alternate substance as a fuel or feedstock. The Energy Tax Act of 1978 defined the term "alternate substance" as any substance other than oil, natural gas, or a product of oil or natural gas. However, the regulations on the Energy Tax Act of 1978 provided that synthetic fuels and other products that are produced from an alternate substance and that have undergone a chemical change during the course of their production are also excluded from the alternate substance category. We believe this position is completely contrary to the expressed language, the legislative history, and the underlying policy of the Energy Tax Act. S. 750 would supersede the definition in the regulations and would redefine the term "alternate substance" to include those items erroneously excluded from the category. AISI supports this amendment. Moreover, in order to address fully the problems caused by the definition in the regulations, this portion of S. 750 should be made retroactive to October 1, 1978.

If this provision cannot be made retroactive, then at the very least, the statute or its legislative history should expressly provide that in changing the definition of the term "alternate substance," Congress does not mean to create any inference that the Treasury Department's original interpretation of that term was correct. Otherwise, taxpayers who intend to challenge the IRS position for years prior to the enactment of S. 750 could be placed at a substantial disadvantage.

Electricity as an alternate substance: Under S. 750, electricity would be treated as an alternate substance for purposes of the energy tax credit for alternative energy property under certain circumstances. Electricity generated by the taxpayer would be treated as an alternate substance if it is generated primarily from an alternate substance. Electricity purchased by the taxpayer would be treated as an alternate substance if the taxpayer establishes that more than 50 percent of the electricity purchased by the taxpayer is generated from an alternate substance, and that the electricity reduces the need for on-site use of oil or gas.

Treating electricity as an alternate substance if it is produced primarily from an alternate substance is consistent with national energy goals, and AISI endorses this proposal. However, it is a mistake to require that purchased electricity reduce the need for on-site use of oil or gas in order to qualify as an alternate substance. That requirement would substantially diminish the significance of the provision for certain energy conserving investments. It would also create an undesirable bias in favor of self-generated electricity in situations where it could be more energy efficient to purchase electricity from the local utility. Accordingly, both purchased and self-produced electricity should qualify as an alternate substance if they are produced primarily from an alternate substance.

The requirement that purchased electricity reduce the need for oil and gas use is not conceptually consistent with the alternative energy property category. Currently, items of alternative energy property generally qualify for the energy tax credit if they use an alternate substance as a fuel or feedstock, regardless of whether the property also reduces the need to use oil or gas. Thus, the oil and gas reduction requirement introduces a new and inappropriate requirement to this category.

As a practical matter, the reduced oil and gas use requirement will not create substantial problems for certain items of replacement property, since alternative energy property is often used to replace property which burns oil or natural gas. For example, under S. 750, melt furnaces, such as electric arc furnaces, which use an alternate substance as their primary fuel would be added to the alternative energy property category. Since electric arc furnaces are often used to replace open hearth furnaces which use oil or gas as a fuel, an electric arc furnace which replaces an open hearth furnace would qualify for the credit if it uses purchased electricity which is produced primarily from an alternate substance. However, this requirement could result in the loss of the credit for alternative energy property which uses purchased electricity and which is part of a new facility or of an expansion of an existing facility, because in that case there would be no existing oil or gas use to be reduced.*/ Since the alternative energy property category is intended to apply to new facilities and to the expansion of existing facilities, in addition to the replacement of existing equipment, the credit should be available for equipment which uses purchased electricity which is produced from an alternate substance, regardless of whether the electricity reduces the need for on-site oil or gas use.

There are other questions which arise as a result of the treatment of purchased electricity as an alternate substance. For example, purchased electricity will only be treated as an alternate substance if the taxpayer establishes that more than 50 percent of the purchased electricity is generated from an alternate substance. Since it is impossible to trace the exact source of electricity purchased from a utility grid, it should be clarified that this test can be satisfied by reference to the average mix of energy sources used to generate electricity in the area in which the equipment is located. In addition, since taxpayers have no control over the mix of energy sources used by a utility to produce electricity, the bill should provide that recapture will not be required merely because there is a subsequent shift in the mix of energy sources used to produce electricity in the area.

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*/ This rule could be construed to mean that any alternative energy property which does not use oil or gas but which performs a function which might have performed by oil or gas fired equipment reduces the "need" for on-site use of oil or gas. However, it would be much simpler to merely delete the reduced oil and gas use requirement.

Other problems are caused by the fact that some steel mills both produce and purchase electricity. Because it is difficult to trace the source of electricity under these circumstances as well, the bill should also contain a presumption or some other means to determine the source of electricity for equipment used at such mills. Finally, the bill should clarify that electricity produced from nuclear power, hydropower, wind power, and other such sources will be considered to be electricity produced from an alternate substance.

Primary fuel requirement: Most items of alternative energy property do not qualify as alternative energy property unless their primary fuel is an alternate substance. Under current law, if an item of alternative energy property ceases to use an alternate substance as its primary fuel in a later year for any reason, any previously claimed credits may have to be recaptured. This could create serious hardships for taxpayers which are unable to obtain an alternate substance for reasons beyond their control.

S. 750 would remedy this problem by providing that the primary fuel requirement need not be satisified "if the taxpayer is unable to obtain the alternate substance for reasons (other than the cost thereof) beyond his control." AISI supports the general concept behind this provision. However, AISI recommends that it be clarified to indicate that the exception is available under certain circumstances even though the alternate substance can be obtained at an increased cost. This exception is apparently intended to excuse compliance with the primary fuel requirement when the alternate substance is unobtainable for reasons beyond the taxpayer's control, but to require continued compliance with the primary fuel requirement where the fuel is available but has become more expensive. However, even where a substance is commercially unavailable for a reason other than cost--such as a strike or a natural disaster--it can frequently still be obtained at some price. For example, if coal is commercially unobtainable due to a railroad strike, taxpayers may still be able to obtain some coal by having it delivered by truck. Taxpayers should not be required to pay commercially impracticable prices to purchase an alternate substance solely to avoid recapture of the energy credit. Accordingly, this provision should be revised to provide that the exception is available unless the alternate substance is unobtainable due solely to increases in the general market price of the alternate substance.

Melt furnaces: Under S. 750, a melt furnace would qualify as alternative energy property if it uses no fuel or if its primary fuel would be an alternate substance. AISI understands that the reference to melt furnaces which use no fuel is intended to extend the credit to basic oxygen furnaces (BOFs), which may be used as an integral part of the steelmaking process. To avoid any possible misunderstanding regarding the qualification of BOFs under this category, BOFs should be specifically identified in the legislative history of this provision.

In a BOF, oxygen is injected as a feedstock to oxidize the carbon contained in the hot metal feedstock. However, in certain types of installations, small amounts of oil and gas may be used in a BOF. While this oil and gas is needed primarily as a cooling agent, its BTU content is ultimately consumed in the furnace. The statute or the legislative history should clarify that BOFs will not be disqualified merely because of this minimal use of oil or gas.

SPECIALLY DEFINED ENERGY PROPERTY

Batch operation conversion equipment defined: S. 750 would add "batch operations conversion equipment" to the list of specially defined energy property. Batch operations conversion equipment is defined as equipment which permits the conversion from batch operations to one or more continuous processes. Batch operations are defined in part as operations where temporary storage of material in process results in heat transfer to the surrounding environment. However, heat transfer can result not only from temporary storage of materials in process, but also from handling of materials in process even where no temporary storage is involved. Other portions of the definition of batch operations conversion equipment refer to "handling or temporary storage of material in process," and the definition of batch operations (page 22, line 20 of the bill) should be modified to refer to "handling or temporary storage of materials in process" as well.

AISI understands that the batch operations conversion equipment category is expressly intended to extend the energy tax credit to continuous casters. In order to avoid any possible misunderstanding regarding the qualification of continuous casters, continuous casters should be specifically identified in the legislative history of this provision.

Principal purpose requirement: Under S. 750, as under existing law, the energy tax credit for specially defined energy property is not available unless the principal purpose of the property is reducing the amount of energy consumed in an existing industrial or commercial facility. Recent experience of members of the iron and steel industry demonstrates that it is extremely difficult to establish the principal purpose of an investment to the satisfaction of the IRS. Accordingly, AISI recommends that this requirement either be deleted from the statute, or that specific standards for its application be provided. Otherwise, the principal purpose requirement could continue to be used by the IRS to restrict the incentive effect of the energy tax credit.

ADMINISTRATION OF THE CREDIT

Under the Energy Tax Act of 1978 and the Windfall Profit Tax Act, the Treasury Department and the IRS were given primary authority to issue regulations and make other determinations regarding the ultimate eligibility of particular items or classes of property for the energy tax credit. Unfortunately, this has resulted in substantial delays in the implementation of the energy tax credit and in questionable interpretations regarding the scope of the credit. S. 750 recognizes these problems and has made several specific changes in the energy tax credit in response to the Treasury regulations. In addition, the bill would give initial discretion in recommending additional items to be included in the list of specially defined energy property to the Secretary of Energy. AISI approves of this proposal, and recommends that it be expanded by giving the Secretary of Energy the authority to issue all regulations defining the scope of property eligible for the energy tax credit. This will avoid the substantial problems caused by the Treasury Department's administration of the energy tax credit.

The Energy Tax Act of 1978 was enacted on November 9, 1978, and the energy tax credits provided by that bill were only available for the relatively short period of 4 years and 2 months. Nevertheless, the Treasury Department did not issue proposed regulations on the business energy tax credits provided by that act until September 9, 1980, more than one year and 10 months after it was enacted. Final regulations were not issued until January 19, 1981, two years and two months after the date of enactment. Thus, more than half of the effective period of the business energy tax credits provided under the Act had expired before final regulations implementing the credits were issued.

The Windfall Profit Tax Act, which substantially expanded the energy tax credits for various items of energy property, was enacted on April 2, 1980. Now, more than a year and a half later, the Treasury Department has yet to issue proposed regulations on the incentives provided under that act. Because many of the credits provided under the Windfall Profit Tax Act will also expire by the end of 1982, it is entirely possible that the credits will have expired before the Treasury Department issues any regulations on the credits. This substantial delay is in sharp contrast to the record of other agencies, such as the Federal Energy Regulatory Commission (FERC) in implementing other elements of the National Energy Act of 1978 and the Energy Security Act. If regulatory authority over the qualification of property for the energy tax credit is transferred to the Department of Energy, delays such as have been experienced in the implementation of prior credits need not be repeated.

In addition to delays in the issuance of final regulations on the energy tax credit, the Treasury Department has substantially diminished the impact of those credits through questionable interpretations of their provisions. For example, the term "alternate substance" is defined in the statute as any substance other than oil, natural gas or a product of oil or natural gas. However, the Treasury regulations provide that synthetic fuels and other products that are produced from an alternate substance and that have undergone a chemical change during the course of their production are also excluded from the alternate substance category. As indicated above, this position is completely contrary to the expressed language, the legislative history, and the underlying policy of the Energy Tax Act.` In adopting this position, the IRS has not only denied the energy tax credit to several classes of equipment which should otherwise be eligible for the credit, but it has also created substantial uncertainty in the energy community regarding how the IRS will address other issues which arise in the future.

AISI recommends that regulatory authority over the qualification of property for the energy tax credit be given to an agency, such as the Department of Energy, which has the expertise to administer the energy tax credit. By placing such regulatory authority in the hands of an agency whose primary concern is energy conservation and alternative energy development, rather than the production and protection of federal revenue, the energy tax credit will be allowed to reach its full incentive effect. In addition, and particularly, if such a transfer of authority is not made, AISI recommends that at the very least the bill contain a deadline for the issuance of final regulations on the energy tax credits. To enforce this deadline, it should be specified that the credits will remain in effect for at least five years after the issuance of the final regulations. While a deadline for the issuance of regulations would probably not affect the substantive content of the regulations, it would at least reduce the substantial periods of uncertainty surrounding the existing credits.

AISI appreciates the opportunity to submit these comments, and urges the Committee to accept these recommendations as consistent with the development of a comprehensive and meaningful industrial energy policy for the United States.

AISI appreciates this opportunity to testify at these hearings and urges this committee to continue its efforts to develop a comprehensive and meaningful industrial energy policy for the United States.

Senator WALLOP. Thank you very much, Mr. Houck.

[The prepared statement follows:]

American Iron and Steel Institute

STATEMENT OF GERALD HOUCK, JR.
ON BEHALF OF THE AMERICAN IRON AND STEEL INSTITUTE
BEFORE THE UNITED STATES SENATE FINANCE COMMITTEE
SUBCOMMITTEE ON ENERGY
AND AGRICULTURAL TAXATION

My name is Gerald Houck, Jr., and I am Director of Energy and Critical Materials of the American Iron and Steel Institute (AISI). I am appearing today on behalf of AISI to testify in support of S. 750.

The 65 domestic members of AISI are involved in all aspects of the iron and steel industry. AISI member companies account for about 91% of the raw steel made in the United States, and employ approximately 400,000 people.

SUMMARY

The steel industry is one of the nation's largest energy consumers. Within the industry, there are substantial opportunities to save energy through energy conservation, waste heat utilization, and the increased use of advanced steelmaking technology. There are also opportunities to substitute coal or coal-derived energy for natural gas or oil. As this Committee again begins to consider legislation to provide tax incentives for energy conservation and the development of alternative sources of energy, careful consideration should be given to the need for incentives to encourage those investments which will reduce energy consumption in the steel industry.

AISI supports Senator Wallop, Senator Durenberger, and the other members of the Finance Committee in their efforts to preserve and expand the energy tax credit. The energy tax credit would be an important and effective incentive for energy conservation. Accordingly, AISI endorses S. 750, which would substantially expand the scope of the energy tax credit, thus making it an even more effective incentive for energy conservation.

The utilization of energy in the steel industry involves a vast number of processes and a wide variety of fuels. AISI will supplement this testimony with additional written comments and recommendations pointing out the special impact of certain provisions of S. 750 on the steel industry.

ENERGY USE AND ENERGY CONSERVATION IN THE IRON AND STEEL INDUSTRY

The iron and steel industry is the second largest industrial energy consumer in the United States. During 1980, the industry consumed 2.3 quads.*/ This represents almost 4% of all direct energy consumption in the United States during that year (net of electricity generating losses). 64 percent of the energy consumed by the steel industry is derived from coal. 25 percent of the industry's energy comes from natural gas, and 5 percent comes from petroleum products. The remaining energy needs--about 6 percent of the total--are satisfied with purchased electricity.

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*/ A quad is equal to one quadrillion BTU's.

Since 1950, energy consumption in the industry has declined from an average of 43 million BTU's per ton of finished steel to an average under 30 million BTU's per ton. This represents an overall reduction in energy consumption of 30 percent, or the equivalent of more than two barrels of oil per ton of finished steel.*/ Recent studies have concluded that there is still a significant potential for further reducing energy consumption by the steel industry.**/ These studies indicate that increased practice of techniques such as continuous casting and combustible gas and waste heat recovery could result in substantial additional energy savings. However, the realization of these energy savings will require substantial capital investments by members of the industry.

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*/ One barrel of oil is equal to 5.8 million BTU's.

**/ See, for example, Research, Development & Demonstration for Energy Conservation: Preliminary Identification of Opportunities for Iron and Steel Making, Arthur D. Little, Inc., January, 1978.

Capital availability is a major constraint on the steel industry's ability to invest in new equipment, including equipment which will reduce the amount of energy used in the steel making process. The depreciation reforms contained in the recently enacted Economic Recovery Tax Act will, in the long run, substantially facilitate capital formation in the steel industry. However, even with these reforms, there is still an insufficient amount of capital available for investment to modernize the steel industry. In addition to general measures to improve the climate for capital formation and investment, Congress should also extend and expand the specific tax incentives to encourage energy conservation. Such incentives would ensure that energy conservation-related investments are accorded the highest possible priority by industrial companies as they evaluate the allocation of their limited capital resources among competing investment opportunities.

IMPACT OF S. 750 ON THE STEEL INDUSTRY

S. 750 would provide an additional twenty percent non-refundable energy tax credit through the end of 1986 for certain items of energy property. The credit would be available for property which is currently included in the alternative energy property category (other than geothermal and ocean thermal property), in the specially defined energy property category, in the recycling equipment category, and in the cogeneration equipment category. The bill would also improve and clarify the definitions of the types of equipment which qualify under each of these categories. In addition, the credit would be available for a new category of energy property--"qualified industrial energy efficiency property."

As defined in S. 750, qualified industrial energy efficiency property is property which modifies or replaces equipment used in an existing manufacturing, production or extraction facility; and which results in the use of less energy per unit of output without increasing the amount of oil or gas used per unit of output. The new credit would be reduced if the adjusted BOE (Barrel of Oil Equivalent) cost is less than $10 per barrel of oil saved during a representative one year period,[*/] and would be subject to a maximum of $60 per barrel of oil saved during that period.

S. 750 represents an important and commendable step toward the development of meaningful incentives for industrial energy conservation. S. 750 would extend the energy

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[*/] For the first two years, the credit would only be reduced if the adjusted BOE cost is less than $5 per barrel of oil saved.

tax credit to a wide spectrum of investments which conserve energy--in addition to a specifically enumerated list of items of equipment, as is the practice under current law. Accordingly, it would provide a significant incentive for energy related investments which cannot be specified on a particular list of "qualifying property."

While S. 750 is generally a well conceived and a highly desirable proposal, it contains several features which could diminish its overall impact, and which could particularly affect its impact on the steel industry. Briefly, the most important of these features are as follows:

1. The bill contains a rule which would limit the energy tax credit for equipment which replaces existing equipment if the existing equipment is not retired (except for emergency or standby capacity). The bill also contains a rule which would reduce the credit if the property increases the capacity of the existing facility or process in connection with which it is installed. These rules could create problems for steel companies which invest in qualifying property which does not increase overall plant capacity but which also cannot be accompanied by the complete retirement of the existing equipment. These rules should be modified to prevent the loss of the energy tax credit under these circumstances.

2. The bill continues to leave administrative authority for the qualification of property for the energy tax credit in the Treasury Department and

> the IRS. This administrative authority should be assigned to an agency which has expertise in energy conservation, such as the Department of Energy or an appropriate successor agency.

It is not necessary to use the limited time available in these hearings for a discussion of these points. Accordingly, these and other technical comments on the bill will be discussed in a separate submission for the record. AISI urges this Committee to give careful consideration to these comments before taking any final action on S. 750.

AISI endorses the efforts of this Committee to preserve and expand the energy tax credit. When combined with other incentives for capital formation, the energy tax credits proposed under S. 750 would provide a stimulus for energy conservation in all segments of American industry, including the iron and steel industry. AISI appreciates the opportunity to testify at these hearings, and urges this Committee to continue its efforts to develop a comprehensive and meaningful industrial energy policy for the United States.

Senator WALLOP. Mr. Gallagher.

STATEMENT OF TERRY P. GALLAGHER, CHAIRMAN OF THE BOARD OF AMERICAN PETROLEUM REFINERS ASSOCIATION AND PRESIDENT OF ASAMERA OIL, INC., REPRESENTING THE AMERICAN PETROLEUM REFINERS ASSOCIATION, WASHINGTON, D.C.

Mr. GALLAGHER. Thank you, Mr. Chairman. My name is Terry Gallagher. I am the president of Asamera Oil, an independent refiner in Colorado, which operates a 45,000 barrel a day refinery. Today I am appearing before the subcommittee in my capacity as the chairman of the board of the American Petroleum Refiners, which has 40 members and approximately 1 million barrels of throughput capacity per day. APRA appears before the committee to support the continuation of business energy tax credits for investments which have as a principal purpose the conservation of energy used in industrial or commercial processes. We support early enactment and passage of Senator Wallop's bill, S. 750. In our view, Senator Wallop's approach will both clarify existing law on the use of energy tax credits and provide the additional incentive necessary for U.S. industry to make even greater strides toward conservation.

I am going to break my prepared testimony down to about four comments: The need to continue conservation tax credits, the potential for energy savings in the petroleum refining industry, the need for energy tax credits in the refining industry, and, lastly, the status of energy tax credits under the Energy Tax Act of 1978.

U.S. industry consumes approximately 40 percent of total U.S. energy requirements, with major process industries such as refining, steel, chemicals, cement, aluminum, and paper accounting for over 70 percent of this industrial energy use. Energy efficient investments in major U.S. process industries can have a great impact on U.S. conservation efforts. In President Reagan's Program for Economic Recovery, the President stated that the "decontrol of oil prices and the continuation of tax credits can be expected to accelerate the decrease in energy consumption" that began in 1973. Likewise, support for industrial energy credits is found in the 1981 National Energy Policy Plan.

During the consideration of the Windfall Profit Tax of 1980, the Congress earmarked approximately 15 percent of estimated total Windfall Tax revenues, or some $30 billion for energy conservation programs. In APRA's view, continuation and expansion of existing energy tax credits for business represent the most efficient use of these earmarked funds. Recognition of this fact has been most recently expressed in a House resolution endorsed by over 220 Members, urging the administration not to abandon tax incentives for energy conservation and renewable energy systems. The Senate resolution sponsored by Senator John Chafee illustrates a similar concern about the need to continue energy tax credits.

It is APRA's hope that the committee will focus on what we believe to be a serious imbalance in existing energy incentives provided by the Federal Government. According to the Treasury Department, the incentives for energy production in 1980 were nine times greater than that for energy conservation. In 1980 the

Federal Government provided subsidies of over $12 billion to energy producers in this country but allocated only $1.3 billion to energy conservation efforts. This imbalance is even furthered by production incentives contained in the recent bill signed into law by the President. This is certainly not to say that existing incentives for energy production are too generous. This country needs and requires incentives for new energy production; however, energy conservation must be given its proper emphasis as well.

A recent Harvard Business School energy project concluded that energy tax credits as large as 40 percent were economically justified.

The American Petroleum Refiners Association has long advocated the need for energy tax credits. We have previously testified before both the Ways and Means Committee and this committee concerning the need for expansion of the credit and suggested revisions in existing law to simplify procedures for claiming the credit. We particularly wish to express our appreciation to Senator Wallop, who has long been an advocate of industrial energy conservation. Last year the Senator introduced the predecessor of S. 750 which is now before the committee. We feel this bill has come a long way and has the potential, if enacted, to bring about energy savings on a secondary level, which would be difficult if not impossible to achieve in today's capital markets.

Petroleum refiners are large consumers of energy. Depending on the complexity of a refinery, from 6 to 16 percent of a barrel of crude is lost in the process of refining that barrel into petroleum products. In a refinery like ours we can use as much as 15 percent of the Btu of the total crude inputs in that barrel; however, we went through a $30 million revision and expansion of new units, and we reduced this level in our refinery, to something like 6 percent.

Using the more conservative figure of 10 percent for a refinery, this represents an annual crude oil savings well in excess of 200,000 barrels.

Senate bill 750 represents a major improvement over existing law. With regard to specifically designed energy property, it clarifies certain definitions which will encourage installation of more efficient refining equipment. In addition, it adds items of equipment such as industrial insulation, industrial heat pumps, and modifications to burners and combustion systems to the list of specifically designed energy property.

Again, like the others testified, we like the QIEEP concept which qualifies for this credit.

In closing, APRA would like to submit an appendix to our testimony from Mr. Bill Hunter, a well-known refinery consultant who is very familiar with the potential for energy savings in smaller petroleum refineries.

Mr. Chairman, this concludes APRA's testimony, and we appreciate the opportunity to testify before you.

Senator WALLOP. Thank you very much, Mr. Gallagher. I appreciate your testimony.

[The prepared statement follows:]

Statement of Terry P. Gallagher Chairman of the Board of American Petroleum Refiners Association

MR. CHAIRMAN: My name is Terry Gallagher. I am presently serving as President of Asamera Oil, Inc., an independent energy company that operates a 45,000 bbl/day refinery in Commerce City, Colorado. I am appearing before the Subcommittee today in my capacity as Chairman of the Board of the American Petroleum Refiners Association, a trade association representing 40 U.S. based independent refiners with a combined throughput capacity of approximately one million barrels per day. APRA appears before the Committee to support the continuation of business energy tax credits for investments which have as a principal purpose the conservation of energy used in industrial or commercial processes. We support early enactment and passage of Senator Wallop's bill, S. 750. In our view, Senator Wallop's bill will both clarify existing law on the use of energy tax credits and provide the additional incentive necessary for U.S. industry to make even greater strides toward energy conservation.

I. THE NEED TO CONTINUE CONSERVATION TAX CREDITS

U.S. industry consumes approximately 40 percent of total U.S. energy requirements with major process industries such as refining, steel, chemicals, cement, aluminum, and

PAPER ACCOUNTING FOR OVER 70 PERCENT OF THIS INDUSTRIAL ENERGY USE. ENERGY EFFICIENT INVESTMENTS IN MAJOR U.S. PROCESS INDUSTRIES CAN HAVE A GREAT IMPACT ON U.S. CONSERVATION EFFORTS. IN PRESIDENT REAGAN'S PROGRAM FOR ECONOMIC RECOVERY, THE PRESIDENT STATED THAT THE "DECONTROL OF OIL PRICES AND CONTINUATION OF TAX CREDITS CAN BE EXPECTED TO ACCELERATE THE DECREASE IN ENERGY CONSUMPTION" THAT BEGAN IN 1973. LIKEWISE, SUPPORT FOR INDUSTRIAL ENERGY CREDITS IS FOUND IN THE 1981 NATIONAL ENERGY POLICY PLAN.

DURING CONSIDERATION OF THE WINDFALL PROFITS TAX OF 1980, THE CONGRESS EARMARKED APPROXIMATELY 15 PERCENT OF ESTIMATED TOTAL WINDFALL TAX REVENUES OR SOME $30 BILLION ~~DOLLARS~~ FOR ENERGY CONSERVATION PROGRAMS. IN APRA'S VIEW, CONTINUATION AND EXPANSION OF EXISTING ENERGY TAX CREDITS FOR BUSINESS REPRESENT THE MOST EFFICIENT USE OF THESE EARMARKED FUNDS. RECOGNITION OF THIS FACT HAS BEEN MOST RECENTLY EXPRESSED IN A HOUSE RESOLUTION ENDORSED BY OVER 220 MEMBERS URGING THE ADMINISTRATION NOT TO ABANDON TAX INCENTIVES FOR ENERGY CONSERVATION AND RENEWABLE ENERGY SYSTEMS. THE SENATE RESOLUTION SPONSORED BY SENATOR JOHN CHAFFEE (R-R.I.) ILLUSTRATES A SIMILAR CONCERN ABOUT THE NEED TO CONTINUE ENERGY TAX CREDITS.

IT IS APRA'S HOPE THAT THE COMMITTEE WILL FOCUS ON WHAT WE BELIEVE TO BE SERIOUS IMBALANCES IN EXISTING ENERGY INCENTIVES PROVIDED BY THE FEDERAL GOVERNMENT. ACCORDING TO THE TREASURY DEPARTMENT, THE INCENTIVES FOR ENERGY PRODUCTION IN 1980 WERE 9 TIMES GREATER THAN THOSE FOR ENERGY CONSERVATION.

IN 1980, THE FEDERAL GOVERNMENT PROVIDED SUBSIDIES OF OVER $ 12 BILLION ~~DOLLARS~~ TO ENERGY PRODUCERS IN THIS COUNTRY BUT ALLOCATED ONLY $1.3 BILLION ~~DOLLARS~~ TO ENERGY CONSERVATION EFFORTS. THIS IMBALANCE IS EVEN FURTHER EXACERBATED BY PRODUCTION INCENTIVES CONTAINED IN THE RECENT TAX BILL SIGNED INTO LAW BY PRESIDENT REAGAN. THIS IS CERTAINLY NOT TO SAY THAT EXISTING INCENTIVES FOR ENERGY PRODUCTION ARE TOO GENEROUS. TH~~E~~IS COUNTRY NEEDS AND REQUIRES INCENTIVES FOR NEW ENERGY PRODUCTION; HOWEVER, ENERGY CONSERVATION MUST BE GIVEN ITS PROPER EMPHASIS AS WELL. ¶ A RECENT HARVARD BUSINESS SCHOOL ENERGY PROJECT CONCLUDED THAT ENERGY TAX CREDITS AS LARGE AS 40 PERCENT WERE ECONOMICALLY JUSTIFIED.

> AMERICAN INDUSTRY, AS WELL AS OTHER SECTORS, IS SUBJECT TO A CONTINUING "CONSUMPTION BIAS." THIS BIAS HAS VERY SERIOUS IMPLICATIONS FOR BOTH THE INDIVIDUAL COMPANY AND THE NATION. IT MEANS THAT CONSERVATION IS NOT BEING ACHIEVED AT ANYTHING LIKE AN ECONOMIC RATE. IN EFFECT, THE INDUSTRY SECTOR IS SERIOUSLY UNDERINVESTING IN ENERGY EFFICIENCY.
>
> THE 1978 NATIONAL ENERGY ACT PROVIDED A LIMITED 10 PERCENT CREDIT FOR CONSERVATION INVESTMENTS. BUT, GIVEN THE FINANCIAL HURDLE, THIS CREDIT SEEMS MUCH TOO LOW. SIGNIFICANTLY GREATER TAX CREDITS, UP TO 40 PERCENT, PLUS ACCELERATED DEPRECIATION OR DIRECT FINANCIAL PAYMENTS ARE REQUIRED. IN ADDITION, ENERGY CONSERVATION LOANS AND GRANTS FOR SMALL BUSINESSES, WHICH ARE OFTEN CASH STRAPPED, ARE NEEDED-- (EMPHASIS ADDED)

THE AMERICAN PETROLEUM REFINERS ASSOCIATION HAS LONG ADVOCATED THE NEED FOR ENERGY TAX CREDITS. WE HAVE PREVIOUSLY TESTIFIED BEFORE BOTH THE WAYS AND MEANS COMMITTEE AND THIS COMMITTEE CONCERNING THE NEED FOR EXPANSION OF THE CREDIT AND SUGGESTED REVISIONS IN EXISTING LAW TO SIMPLIFY PROCEDURES FOR CLAIMING THE CREDIT. WE PARTICULARLY WISH TO EXPRESS

OUR APPRECIATION TO SENATOR MALCOLM WALLOP WHO HAS LONG BEEN AN ADVOCATE OF INDUSTRIAL ENERGY CONSERVATION. LAST YEAR, SENATOR WALLOP INTRODUCED S. 3006 WHICH WAS THE PRECURSOR TO S. 750 WHICH IS NOW BEFORE THE COMMITTEE. WE FEEL THAT THE BILL HAS COME A LONG WAY DURING THIS TIME AND HAS THE POTENTIAL, IF ENACTED, TO BRING ABOUT ENERGY SAVINGS ON A SECONDARY LEVEL WHICH WOULD BE DIFFICULT IF NOT IMPOSSIBLE TO ACHIEVE IN TODAY'S CAPITAL MARKETS WITHOUT ADDITIONAL INCENTIVES. THE LARGE NUMBER OF COSPONSORS OF S. 750 INCLUDING SENATORS FROM BOTH PRODUCING AND CONSUMING STATES EMPHASIZES THE IMPORTANCE OF THESE CREDITS FOR EVERYONE CONCERNED.

II. THE POTENTIAL FOR ENERGY SAVINGS IN THE PETROLEUM REFINING INDUSTRY

PETROLEUM REFINERIES ARE VERY LARGE CONSUMERS OF ENERGY. DEPENDING ON THE COMPLEXITY OF A REFINERY, FROM 6 TO 16 PERCENT OF A BARREL OF CRUDE OIL IS LOST IN THE PROCESS OF REFINING THE REMAINDER OF THAT BARREL INTO USABLE PETROLEUM PRODUCTS. IN A MEDIUM SIZED, FAIRLY SOPHISTICATED REFINERY SUCH AS THE ASAMERA FACILITY IN COMMERCE CITY, ENERGY USAGE CAN EQUAL 15 PERCENT OF THE BTU VALUE OF TOTAL CRUDE INPUTS TO THE REFINERY. APRA ESTIMATES THAT, THROUGH MAXIMUM USAGE OF ENERGY EFFICIENT REFINING EQUIPMENT, ENERGY SAVINGS OF 10 TO 25 PERCENT CAN BE ACHIEVED. USING THE MORE CONSERVATIVE FIGURE OF 10 PERCENT, THIS REPRESENTS AN ANNUAL CRUDE OIL SAVINGS WELL IN EXCESS OF 200,000 BARRELS OF OIL PER YEAR IN JUST ONE MEDIUM SIZED PETROLEUM REFINERY.

III. THE NEED FOR ENERGY TAX CREDITS IN THE REFINING INDUSTRY

WITH THE POTENTIAL FOR SAVING SO MUCH ENERGY THROUGH THE INSTALLATION OF THIS EQUIPMENT, ONE WILL UNDOUBTEDLY ASK WHY THE ENERGY TAX CREDIT IS SO NECESSARY IN THE FIRST PLACE. CERTAINLY, SOME ENERGY SAVING INVESTMENT HAS ALREADY BEEN UNDERTAKEN IN THE REFINING INDUSTRY. MOST OF THIS INVESTMENT HAS OCCURRED IN LARGER, MORE SOPHISTICATED REFINERIES OPERATED BY THE MAJOR OIL COMPANIES. MUCH OF THIS INVESTMENT HAS QUALIFIED FOR THE EXISTING 10 PERCENT CREDIT. THERE ARE THOSE WHO MAINTAIN THAT RISING ENERGY COSTS CONSTITUTE A NATURAL INCENTIVE FOR INDUSTRY TO INCREASE CURRENT LEVELS OF SPENDING FOR ENERGY SAVING EQUIPMENT. BUT WITH THE WORLD OIL GLUT AND FALLING PETROLEUM PRICES, THE LIKELIHOOD OF INCREASED INVESTMENT SEEMS MUCH LESS CERTAIN.

THE PETROLEUM REFINERIES IN THE UNITED STATES THAT DESPERATELY NEED TO SPEND LARGE AMOUNTS OF MONEY ON UPGRADING ARE THE SMALL TO MEDIUM SIZED REFINERIES OPERATED BY INDEPENDENTS. LACKING PROFITS FROM CAPTIVE CRUDE OIL PRODUCTION, THESE REFINERIES MUST JUSTIFY ANY NEW INVESTMENT ON POSITIVE REFINERY MARGINS--WHICH TO DATE HAVE BEEN FLAT IF NOT NEGATIVE IN MANY CASES. A POOR PROFIT PICTURE DOWNSTREAM, COMBINED WITH VERY HIGH INTEREST RATES, PUTS ANY NEW ENERGY EFFICIENT INVESTMENT LAST ON A REFINER'S PRIORITY LIST. GIVEN THE PHYSICAL PLANT CONFIGURATION OF MOST INDEPENDENT REFINERS, IF ANY MONEY IS AVAILABLE FOR INVESTMENT, IT WILL FIRST GO INTO REFINERY PROJECTS WHICH STRETCH A BARREL OF CRUDE OIL

INTO LIGHTER PRODUCTS SUCH AS UNLEADED GASOLINE, JET FUEL, OR DIESEL.

CERTAINLY, THE ACCELERATED DEPRECIATION PROPOSALS CONTAINED IN THE RECENT TAX BILL IMPROVE THE CLIMATE FOR NEW INVESTMENT--BUT PRIMARILY FOR THAT INVESTMENT WHICH PROVIDES THE MOST IMMEDIATE RETURN FOR AN INDIVIDUAL COMPANY. IF ENERGY EFFICIENT INVESTMENT IS TO PROCEED AT A DESIRABLE PACE, THE EXISTING 10 PERCENT CREDIT MUST BE RETAINED, AND IN CERTAIN AREAS MUST BE CLARIFIED SO THAT A REFINER CAN MAKE THESE INVESTMENTS KNOWING, WITH SOME DEGREE OF CERTAINTY, WHAT HIS TAX POSITION WITH THE INTERNAL REVENUE SERVICE IS LIKELY TO BE.

IV. STATUS OF ENERGY TAX CREDITS UNDER THE ENERGY TAX ACT OF 1978

THE ENERGY TAX ACT OF 1978 FIRST GAVE RECOGNITION TO THE NEED FOR ENCOURAGING ENERGY EFFICIENT INVESTMENT. UNFORTUNATELY, REGULATIONS PURSUANT TO IRC §48(L) WERE NOT FINALIZED UNTIL JANUARY 23, 1981--OVER TWO YEARS AFTER THE EFFECTIVE DATE OF THE ENERGY TAX ACT. AS I AM SURE ALL OF THE MEMBERS OF THE SUBCOMMITTEE ARE AWARE, THE IRS TOOK A VERY RESTRICTIVE INTERPRETATION ON MANY OF THE DEFINITIONS CONTAINED IN THE ACT. THE JOINT COMMITTEE ON TAXATION HAD ORIGINALLY ESTIMATED THAT OVER 600 MILLION DOLLARS IN ENERGY INVESTMENT TAX CREDITS WOULD BE CLAIMED DURING THE TWO YEAR PERIOD SUBSEQUENT TO OCTOBER 1, 1978. IN FACT, ONLY 310 MILLION DOLLARS IN CREDITS HAVE BEEN CLAIMED. WHILE U.S. ENERGY CONSERVATION DURING THIS TIME HAS SHOWN A DESIRABLE TREND TOWARD MORE EFFICIENT USE OF OUR NATURAL RESOURCES, WE WOULD BE MUCH FURTHER ALONG

THIS ROAD IF THE ENERGY TAX ACT HAD BEEN ALLOWED TO PLAY THE ROLE THAT CONGRESS HAD ORIGINALLY INTENDED.

S. 750 REPRESENTS A MAJOR IMPROVEMENT OVER EXISTING LAW. WITH REGARD TO SPECIALLY DEFINED ENERGY PROPERTY, IT CLARIFIES CERTAIN DEFINITIONS WHICH WILL HELP ENCOURAGE INSTALLATION OF MORE EFFICIENT REFINING EQUIPMENT. IN ADDITION, IT ADDS ITEMS OF EQUIPMENT SUCH AS INDUSTRIAL INSULATION, INDUSTRIAL HEAT PUMPS, AND MODIFICATIONS TO BURNERS AND COMBUSTION SYSTEMS TO THE LIST OF "SPECIALLY DEFINED ENERGY PROPERTY."

SEC. 3 OF THE BILL CREATES A CATEGORY OF QUALIFIED INDUSTRIAL ENERGY EFFICIENCY PROPERTY (QIEP) WHICH QUALIFIES FOR THE CREDIT. THE QIEP REPRESENTS AN INNOVATIVE CONCEPT WHICH WILL SOLVE MANY OF THE DISAGREEMENTS THAT CURRENTLY EXIST OVER WHETHER OR NOT A GIVEN PIECE OF EQUIPMENT FALLS WITHIN THE DEFINITION OF "SPECIALLY DEFINED ENERGY PROPERTY." THE QIEP ALLOWS NEW ADVANCES IN ENERGY EFFICIENT TECHNOLOGY TO QUALIFY FOR THE CREDIT IF DEMONSTRATED ENERGY SAVINGS CAN BE SHOWN.

IN THIS REGARD, I WOULD POINT OUT THAT THERE MAY BE A POTENTIAL PROBLEM ASSOCIATED WITH THE APPLICATION OF QIEP IN THE REFINING INDUSTRY WHERE REFINERY RUNS HAVE TO BE REDUCED BECAUSE OF INTERRUPTIONS IN CRUDE SUPPLY. FOR EXAMPLE, IF A REFINERY INSTALLED AN ITEM OF EQUIPMENT WHICH REDUCED ENERGY USE PER UNIT OF OUTPUT, A REFINER WOULD WANT TO HAVE THE ASSURANCE THAT THE QIEP WOULD BE AVAILABLE IF A CRUDE OIL EMBARGO OR OTHER SIMILAR EVENT FORCED THE INVOLUNTARY REDUCTION OF REFINERY RUNS DURING A SUBSEQUENT PERIOD.

However, this is the kind of problem that could be worked out in report language, for there will be other industries with similar problems regarding recomputation of the QIEP investment credit. APRA supports the QIEP and hopes that this Committee will recommend its inclusion in the bill the Committee marks up.

In closing, APRA would like to submit as an appendix to our testimony a letter from Mr. William K. Hunter, a well-known refinery consultant who is very familiar with the potential for energy savings in smaller petroleum refineries. Mr. Hunter's letter details some of the areas where energy savings can be achieved through the installation of energy efficient equipment.

Mr. Chairman, this concludes APRA's testimony. We appreciate the opportunity to appear before the Subcommittee today. Thank you.

WILLIAM K. HUNTER
21274W Boschome Circle
Kildeer, Illinois 60047
Telephone (312) 438-2096

October 14, 1981

Mr. Ray F. Bragg, Jr.
Executive Director
American Petroleum Refiners Association
607 Ring Building
1200 18th Street, N. W.
Washington, D. C. 20036

Subject: Refinery Energy Usage

Dear Ray:

In accordance with your request, I am writing to summarize my views on the subject with respect to the small refiners.

Refineries are substantial consumers of energy. In previous communications, I have shown, based upon the work of the late Dr. W. L. Nelson, the following pattern of energy requirement:

	Energy Consumed (1,000 Btu/bbl.)	
Refinery Complexity	Total Heat	Total Energy
3	340	370
6	500	540
9	655	720
12	820	920

Using the value of 5,800,000 Btu/BOE one may then estimate the percentage of the crude barrel that is equivalent to energy consumed by refineries of various complexities as follows:

	Energy Consumed (As a % of Crude)	
Refinery Complexity	Total Heat	Total Energy
3	5.9%	6.4%
6	8.6	9.3
9	11.2	12.4
12	14.1	15.9

The difference between the total heat and total energy numbers above represents the level of electrical power consumption.

The least complex of the small refineries will consume energy in an amount corresponding to about 6 to 9 percent of oil throughput. Such consumption will range upward to the vicinity of 16 percent for the more complex among the small refineries. The complex nature of crude oil (comprised of thousands of difference compounds) requires high energy input to separate and/or convert the constituents involved to produce useful products. Process heaters are used to heat crude oil up to the range of 700° F to separate naphtha and distillate oils from the heavy oils and asphaltic material. Process heaters are further used to heat the fractions which have been separated from the crude oil up to temperatures in the range of 700° to 1000° F. This is done in order to upgrade these fractions to useful products using such processes as hydrodesulfurization, catalytic reforming, hydrocracking and catalytic cracking. Boilers are used to make steam to assist in processing and, of course, electrical power is used to operate the many pumps, compressors and blowers required.

Energy losses in refineries occur for the most part in four principal ways:

1. Discharge of high temperature gases from combustion in such equipment as boilers and process heaters.
2. Discharge of heat to cooling water and cooling towers.
3. Loss of heat from the walls of vessels, types and other equipment.
4. Loss of product gas to the refinery flare system.

An extremely important facet of refinery energy loss is the fact that it represents high quality energy. In other words, the energy loss at its source point is either at high temperature or is concentrated (as is the case with product gas loss) and, therefore, it is much more recoverable than is the case with such losses in the majority of industrial situations.

While energy recovery is practiced to a large extent in existing refineries, the economic parameters which justified the equipment and installations involved were mainly derived on the basis of lower cost crude oil and/or energy. Considerable opportunity remains in existing refineries to reduce energy consumption. Included with these opportunities are the following:

To improve heat losses to a level consistent with current high energy costs:

1. Additional refinery insulation.
2. Modifications to burners, combustion systems, or process heaters.

To reduce energy requirements of refinery processes:

1. Automatic energy control systems including heating firing controls, analytical systems and blending optimization equipment.
2. Product separation and dewatering equipment.
3. Energy efficient pumps, motors, compressors and process facilities.
4. Improved catalysts and catalytic processes.

To recover available energy:

1. Combustible gas recovery systems.
2. Heat exchangers.
3. Industrial heat pumps.
4. Use heat boilers and economizers.
5. Pressure recovery turbines.

Such opportunities are present in many forms in most of the processes which comprise the petroleum refinery.

The above conservation opportunities offer significant potential for reduction of the crude oil and other energy consumed in the refinery. While such reduction represents lower costs, the refiner (and particularly the small one) is faced with many items which compete for his available capital. Major among these competitors is the necessity to maintain significant inventories of crude oil and product to insure the continuity of his operation. The cost of these inventories has escalated rapidly in recent years. Other competitors for capital are the mandatory environmental controls which involve pollution control systems and more complex process equipment.

It is my opinion that encouragement in the form of investment credits would enable the refiner to undertake expenditures for energy conservation that might otherwise be relegated to a back seat in the competition for his working capital. At the same time I consider that the potential crude oil and other energy savings which could accrue would be most beneficial to the national interest.

If you have any questions or would like me to elaborate on any of the above, Ray, please let me know.

Kindest regards,

Bill

William K. Hunter

Senator WALLOP. Mr. Bedell.

STATEMENT OF DENNIS P. BEDELL, CHAIRMAN, AMERICAN MINING CONGRESS TAX COMMITTEE, WASHINGTON, D.C.

Mr. BEDELL. Thank you, Senator Wallop. I am Dennis Bedell. I am chairman of the Tax Committee of the American Mining Congress, and I appear before you today on behalf of the American Mining Congress. We appreciate this opportunity to testify in support of S. 750 which you have introduced.

The American Mining Congress has a great interest in the tax provisions relating to energy production and conservation from the perspective both of producers of energy and of substantial consumers of energy. Our membership includes companies engaged in the extraction of coal, our most abundant domestic source of energy. Our membership also includes companies engaged in energy intensive mining and minerals processing activities, particularly in the production of metals and cement.

There continues to be a compelling national need to promote domestic energy conservation to lessen dependence on uncertain foreign sources, to reduce substantial balance of payments deficits attributable to energy imports, and to minimize the inflationary impact of the frequent price increases for foreign oil imports.

The record will show that there has been some progress made by industry in achieving energy savings. However, although there has been progress made, not enough has been achieved and more needs to be done. Therefore, we agree that the energy tax credit provisions should be strengthened and improved to adequately promote energy conservation and greater energy savings.

It must be recognized that in many instances, particularly in the case of the mining industry, the capital expenditures required to make further progress will be of a very substantial magnitude. The American Mining Congress believes that S. 750 and the approach embodied therein is an important step in the right direction, and we commend you for your continued interest in this area.

We have some suggestions in our statement for the committee's consideration. One I would like to comment on is not an item for change in the legislation itself. In moving to supplement the approach of present law with its listing of items and the inherent problems contained in that type of approach with the broader conceptual approach that is embodied in the qualified industrial energy efficiency property concept, we believe that it is important that the concept be given as much guidance in the legislative history as is possible. Obviously, the capital expenditures required of industry will be of substantial magnitude. And, therefore, to the extent certainty of eligibility for the energy credit can be provided, that is extremely desirable. So we strongly recommend that in the legislative history, the committee reports, guidance be given as to the meaning and the content of some of the new definitional terms that are contained in the approach of S. 750.

Again, Senator Wallop, we appreciate this opportunity to appear and to comment on the legislation. We commend you and Senator Durenberger for your efforts in the development of meaningful energy tax incentives.

Thank you.

Senator WALLOP. Thank you, Mr. Bedell.

[The prepared statement follows:]

STATEMENT
OF THE
AMERICAN MINING CONGRESS
TO THE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
OF THE
COMMITTEE ON FINANCE
U. S. SENATE

BY
DENNIS P. BEDELL
CHAIRMAN, AMERICAN MINING CONGRESS TAX COMMITTEE
OCTOBER 19, 1981

Mr. Chairman and Members of the Subcommittee:

My name is Dennis P. Bedell. I am Chairman of the Tax Committee of the American Mining Congress and a member of the Washington, D.C. law firm of Miller and Chevalier, Chartered.

I am appearing before you today on behalf of the American Mining Congress, and we appreciate this opportunity to testify with regard to S. 750, introduced by Senator Wallop, and S. 1288, introduced by Senator Durenberger. The subject of energy tax credits, with which these bills deal, is one of importance to the American Mining Congress.

The American Mining Congress is an industry association representing all segments of the mining industry. It is composed of (1) U.S. companies that produce most of the nation's metals, coal and industrial and agricultural minerals; (2) companies that manufacture mining and mineral processing machinery, equipment and supplies; and (3) engineering and consulting firms and financial institutions that serve the mining industry.

The American Mining Congress has a great interest in tax provisions relating to energy production and conservation from the perspective both of producers of energy and of substantial consumers of energy. Our membership includes companies engaged in the extraction of coal, our most abundant domestic source of energy. Our membership also includes companies engaged in energy intensive mining and minerals processing activities, particularly in the production of metals and cement. According to one article relating to the energy requirements for primary materials producers, ten of the twelve major high-energy-intensity materials were metals. (Kellogg, "Sizing up the Energy Requirements for Producing Primary Materials," Engineering and Mining Journal, page 61 (April 1977).)

As strongly as in the days of an oil embargo, there remains a compelling national need to promote domestic energy production and conservation to lessen dependence on uncertain foreign sources, to reduce substantial balance of payments deficits attributable to energy imports, and to minimize the inflationary impact of the frequently increasing prices for foreign oil imports.

In its third annual report issued in January 1981, the Department of Energy reported that the top ten group of industrial users was found to produce more using less fuel. This encouraging trend was undoubtedly the result of many factors, notably including the economic justification of incurring energy saving capital expenditures. However, we strongly believe that the tax incentives provided under present law were also effective in contributing to this development.

The performance of the aluminum industry is a fairly representative example of industrial energy savings progress. In a January 1980 report published by the Aluminum Association, entitled "Energy and the Aluminum Industry", steady progress for improved smelting efficiency is cited. Since the 1920's, the average kilowatt hour of energy used to produce one pound of metal has decreased from greater than 12 to approximately 8 as of 1979. Further, the newest plants use about 6 kwh/lb. In one pilot commercial installation coming on stream in 1976, consumption is under 5 kwh/lb. of metal produced. For more recent performance, the aluminum industry reported cumulative energy savings equivalent to 57 million barrels of oil since the inception in the mid 1970's of a voluntary program under which the industry committed improvements in energy efficiency to the Department of Commerce, the Federal Energy Administration, and the Department of Energy. For the future, it is acknowledged that the aluminum industry has substantial potential for long-range energy conservation. However, extremely high capital requirements and low returns may preclude the installation of present best available technology. For example, in 1980, replacing smelter capacity with the best available technology was estimated to cost $16 billion. At that time, that cost represented up to 140 percent of the total capitalization of the 12 U.S. primary producers. Thus, the report demonstrates significant progress by this industry but also demonstrates the enormously expensive cost of attaining maximum energy savings.

As another example, similar energy savings progress and enormous capital requirements for maximizing energy savings for the steel industry are set forth in a January 1980 report published by the American Iron and Steel Institute, entitled "Steel at the Crossroads: The American Steel Industry in the 1980s".

Thus, in spite of the progress achieved, we readily agree that not enough has been achieved. Therefore, we believe that the energy tax credit provisions should be strengthened and improved to adequately promote energy conservation and production. Clearly, sufficient incentives should be provided for costly energy savings and coal conversion projects that are not economically justifiable without sufficient tax incentives. Provision of energy incentives through the tax laws may be the most efficient approach. The creation of a separate bureaucracy is unnecessary. Properly drawn and administered incentives have a proven track record of successfully promoting desired private sector responses.

General Position With Respect to S. 750

In general, the American Mining Congress supports the provisions of S. 750 which would:

1. Increase the energy tax credit rate under the present law to 20 percent for alternative energy property, specially

defined energy property, recycling equipment, and cogeneration equipment.

2. Expand and clarify the definitions of property eligible for the credit under present law.

3. Extend the credit to qualified industrial energy efficiency property.

Suggestions Concerning the Proposed Qualified Industrial Energy Efficiency Property Credit -- S. 750

Our general suggestion is that the proposed provisions should be simplified to avoid, whenever feasible and consistent with the objectives sought to be achieved, difficult definitional and compliance problems. Our specific areas of concern are as follows:

1. Existing facility requirement. Under the bill, the credit is available only with respect to property used in the modification or replacement of one or more processes carried on at a facility on January 1, 1981. We believe that the credit should be available for otherwise qualified property which is used in connection with a new facility. This is particularly important for a new facility when the credit would make a more energy-efficient process economically feasible in a choice between alternative processes. Because an energy savings test could not be applied to a new facility, eligibility for the credit could be limited to capital costs for property used in a process demonstrated to be more energy-efficient than alternative processes. Other limitations, such as the capacity increase limitation, obviously should not apply in the case of a new facility.

2. Waiver of energy savings tests for costs attributable to conversions from oil to coal. Under the bill, a modification of an existing facility must satisfy several energy savings tests. First, the modification must result in utilization of less energy per unit of output. Second, there must be an annual aggregate decrease in energy consumption of not less than 1,000 barrels of oil equivalent.

We believe that these tests should not apply to costs attributable to "process changes" involved in converting from the use of oil to coal.

3. Capacity increase limitation. Under the bill, the credit is reduced whenever otherwise eligible property results in a more than a 10 percent increase in the capicity of a facility, process or processes.

We recommend the deletion of this provision for several reasons. First, the provision adds significant complexity and would undoubtedly foster administrative, compliance, and audit problems. For example, there may be serious definitional problems in comparing premodification units of production with slightly different units of production after the modification to determine if there has been a change in capacity. Moreover, determination of the postmodification capacity may be difficult depending on whether it is based on actual production, engineering estimates, ideal or average conditions, etc. Second, the limitation might discourage the acquisition of property having a twofold benefit; increasing energy savings and also increasing productivity. It is well known that U.S. productivity increases have been lagging in recent years. The limitation based on capacity increases could have the unintended effect of unfavorably treating process modifications which would increase productivity as well as achieve energy savings.

4. Items for legislative history. We believe that explicit guidance in the legislative history should be provided concerning some of the proposed definitions and typical process modifications that are to qualify. In this case, certainty of eligibility for capital expenditures may be especially important in making sure that the proposed legislation will achieve its desired energy-saving objectives.

With respect to definitions and limitations, explicit guidance, with appropriate examples, should be provided for the meanings of (1) modification of a facility, (2) property used as part of a modification, (3) unit of output, (4) a substantial change in "character" of output, and, if retained in the legislation, (5) an "existing" facility, (6) capacity increases, and (7) energy savings attributable to nonqualified property.

With respect to typical process changes intended to qualify, we would recommend consideration of inclusion of legislative history explicitly stating that conversion of a cement plant from a wet process to a preheater/precalciner dry process is the kind of modification intended to qualify if the requirements for energy savings, etc., under the bill are satisfied.

5. Termination date. Under the bill, the credits would be terminated at the end of 1986. We recommend that the energy credits be made permanent.

General Position With Respect to S. 1288

In general, the American Mining Congress supports the provisions of S. 1288 which would:

1. Expand the definition of specially defined energy property eligible for the energy tax credit.

2. Extend the energy tax credit to insulation installed in an industrial or commercial building.

3. Increase the rate of the credit to 20 percent for specially defined energy property and insulation property installed in an industrial or commercial building.

Suggestions Concerning Present Law

The existing energy investment credit also should be made available to investments which improve the energy efficiency of mining and mineral processing operations and should be applicable without regard to whether the investments are made with respect to existing or new facilities.

In addition, we would like to note our belief that the regulations adopted by the Treasury Department (Fed. Reg., Jan. 23, 1981, p. 7287 et seq.) to implement the energy credit provisions of the Energy Act of 1978, are too restrictive and do not adequately carry out Congressional intent. Specifically, we believe that the regulations are too restrictive in (1) disqualifying certain derivatives from coal as an alternate substance, (2) disqualifying equipment used beyond the point at which first product marketable as a feedstock has been produced, (3) providing that only the incremental cost for certain property qualifies, and (4) disqualifying certain combinations of alternative substances.

Conclusion

We appreciate the opportunity to comment on this very important proposed legislation, and we commend Senators Wallop and Durenberger for their interest in the subject of energy tax incentives.

Senator WALLOP. I will just throw this out to the panel, but it seems that the list is troubling in one way or another to all of us. You, Mr. Cobb, defined the problems that you have had by not being on the list.

Did any of you conceive of a means by which we can force a decisionmaking process? In other words, instead of your fruitless efforts to get your process qualified. Should there be a timeframe and a list of things to submit rather than going to the details of lists? Do you have any ideas at all how we might sidestep the list, because I don't think any of us here are capable of drawing a list that is complete, and if we did it would be out of date before the ink was dry on the legislation, given ordinary American ingenuity. Do you have any ideas on how we might force a decision?

Mr. GALLAGHER. It seems like, Senator, that you are trying to do that with this QIEEP.

Senator WALLOP. Well, that is the purpose of it, but I am not sure that we have achieved it.

Mr. GALLAGHER. Basically, the QIEEP imposes criteria that requires demonstrated energy savings. I think the concept is broad, and that is something that is greatly needed. It eliminates the list.

Senator WALLOP. Do you think it goes far enough? I am uncomfortable with it. I guess I like the idea of it.

Mr. GALLAGHER. It seems to us it is certainly broad.

Senator WALLOP. It was better than where we were.

Mr. GALLAGHER. We don't want to go back to a list. This is just the opposite of a list. Obviously, you don't want something that can be abused, too.

Senator WALLOP. No, we don't. I don't think anybody in here wants that.

Mr. GALLAGHER. I think that gives you that protection, in this, what you are trying to do here.

Mr. COBB. I think if the criteria is set up, like we are trying to do here, and then we don't have to wait for someone like the Secretary of the Treasury to comment or approve, if we can prove that we are saving and are meeting the criteria in the bill, then we ought to be allowed to go forward or at least know where we stand within there.

Senator WALLOP. Go ahead.

Mr. HOUCK. Senator, one recommendation that is contained in our written testimony, that I didn't cover in the summary, is the idea that the responsibility for determining what is qualified property be assigned to the Department of Energy or some other administrative unit outside the Department of Treasury where we think there might reside more expertise in the area of energy conservation and a better ability to evaluate what type of equipment should qualify.

Senator WALLOP. Of course, if we put it in the Department of Energy, and then it goes away, we will have to trace it down somewhere. [Laughter.]

Mr. HOUCK. I would assume that someone would be assigned that responsibility, following that.

Senator WALLOP. I agree with that.

Do you know what is interesting? I see a budding inconsistency in the administration, which causes me some concern. I have been and continue to be a strong supporter of incentives for energy production in this country. I think the country needs it. We ought to be producing our own to the extent that we possibly can. But to say that we should have no incentives for conservation is as much as to say that whatever we have produced has no tomorrow, even if we were to gain self-sufficiency in production of our own resources. It is almost an attitude as though that is limitless.

The other side of it, which really worries me, is that conservation is production of energy. It ought to be equated in some manner. Would any of you disagree with that or care to comment?

Mr. COBB. Well, I don't disagree with it. I think if we can get the marketplace established, then it takes some of the incentive off of it. But I think that is going to be a long time off before we get to that.

Senator WALLOP. Well there is bound to be. As long as we are in the business of making incentives to produce, we are going to have a distortion at that level in some way. Again, it would seem the balance would dictate that you would have a broadfront approach through incentives for energy at every level.

Mr. Houck, in the iron and steel world are there as well environmental benefits that go along with your energy conservation effort?

Mr. HOUCK. I would say that I can think of examples where improvements in environmental quality would accompany energy installations. And, of course, as you know, whenever anything new is put in it has to come up to the latest in environmental requirements.

Senator WALLOP. But most of these energy efficient processes generally mean, don't they, that there is less of an environmental consequence? You use more of what you have got in any given instance.

Mr. HOUCK. Well, clearly, if you are burning less fuel you are putting out less of something.

Senator WALLOP. Or even if you burn it more completely, generally speaking don't you produce less byproduct?

Mr. HOUCK. That is correct.

Senator **Wallop**. We ought to be able to find some benefit at that level, too.

Senator Durenberger, I welcome you here. Do you have a statement that you would care to make?

Senator **Durenberger**. I can hold it.

Senator **Wallop**. All right. Sure.

Well, again, I thank you all, and I would again tell you that we need your continued support here. We will look at the various recommendations that are in your complete testimony and may call on you again for advice as we try to change it, because it is clear that some of this will have to be changed in some ways. I hope that the change is just toward progress. Thank you all very much.

Mr. **Cobb**. Thank you.

Senator **Wallop**. Next is a panel consisting of James A. Harris, vice president of synthetic fuels, Koppers Co., Inc., representing the Tennessee Synthetic Fuels Association; and Michael S. Koleda, executive director of the National Council of Synthetic Fuels, accompanied by Mr. William Boardman, tax attorney for Wheelabrator-Frye, representing the National Council of Synthetic Fuels, Washington, D.C.

Good morning, gentlemen, and please proceed, Mr. Harris.

STATEMENT OF JAMES A. HARRIS, VICE PRESIDENT, SYNTHETIC FUELS, KOPPERS CO., INC., REPRESENTING TENNESSEE SYNFUELS ASSOCIATES, WASHINGTON, D.C.

Mr. **Harris**. Mr. Chairman, I appreciate this opportunity to discuss with you this morning tax incentives for energy independence. My name is James A. Harris. I am vice president for synthetic fuels for Koppers Co. Joining me today are McGee Grigsby and Bill Kelly, who are partners in Latham, Watkins & Hill and who are representing us as general counsel in two of the projects that we are investing in.

Koppers and our partners in these projects have already invested over $25 million of private funds in the development of three synthetic fuels projects. These projects will convert coal and peat to liquid transportation fuels. The largest of these projects is a 20,000-barrel-per-day Hampshire project in Wyoming.

We undertook these investments because we believe that Congress and the Nation have reached a consensus that it is important to reestablish our energy independence. In 1970 this Nation imported only 10 percent of its crude oil, but in 1979 we imported 42 percent. This consensus to increase our energy independence was reflected in the Energy Security Act and the related tax incentives. The investments that we have made in these projects have now brought us to the point that we must proceed with construction or abandon the projects. Without the tax incentives we expected when we initiated the projects we cannot justify the large investments to proceed.

Three things must be done to insure that the tax incentives will result in the production of synthetic fuels:

First, the 10-percent energy tax credit now scheduled to expire at the end of 1982 must be extended. Senate bill 750 will accomplish this.

Second, the scope of coverage of energy tax credits must be clarified to bring it in line with what we understood to be the original congressional intent. That intent, as we understand it, was to allow the credit for the major onsite capital items for synthetic fuels projects. Current regulations disqualify from 30 to 40 percent of the investment required for a synthetic fuels facility. In its present form Senate bill 750 does not address this problem.

The third point is that progress depreciation provisions, which were a part of all the capital-recovery proposals over the last 2 years, were not included in the legislation that Congress has just passed. Progress depreciation still remains essential to the economic viability of many of these projects, and it should be included in Senate bill 750.

Under current tax law there is a major disadvantage for long-term capital projects versus short-term projects. Most of the synthetic fuels projects, as you are well aware, are long-term type projects. The allowance of progress depreciation would eliminate this incentive.

Mr. Chairman, we appreciate your continuing efforts to insure that the necessary tax incentives are in place for the development of the synthetic fuels industry. We would be pleased to work with you and your staff to prepare appropriate amendments to Senate bill 750. I thank you again for the opportunity to testify on a subject of great importance to our national security, that is the development of alternative fuel sources.

Senator WALLOP. Thank you, Mr. Harris.

[The prepared statement follows:]

STATEMENT OF JAMES A. HARRIS
ON S. 750
BEFORE THE
SENATE FINANCE COMMITTEE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION

October 19, 1981

Mr. Chairman and Members of the Committee, I appreciate this opportunity to discuss the energy tax incentives necessary for energy independence. My name is James A. Harris, and I am Vice President for Synthetic Fuels of Koppers Company, Inc. I also serve as President of Tennessee Synfuels Associates, a joint venture of Koppers and Cities Service, that has developed plans to construct a 50,000 barrel per day coal-to-gasoline facility near Oak Ridge, Tennessee. In addition to the Tennessee project, Koppers is an equity investor in two other planned coal conversion projects: Hampshire Energy, near Gillette, Wyoming, and First Colony Farms in North Carolina. Koppers and its equity partners have invested in excess of $25 million of private funds to determine the feasibility of the projects and to begin the engineering and environmental work necessary for construction.

Koppers also has a long history of involvement with the technology for converting coal into synthetic gas. Koppers built its first gasifier for the Bureau of Mines in 1948. Last year, Koppers launched a joint venture with Babcock & Wilcox, known as KBW Gasification Systems, Inc. This venture combines Koppers' expertise in coal gasification with Babcock & Wilcox's expertise in boilers and heat transfer technology.

ENERGY INDEPENDENCE AND NATIONAL SECURITY

Our extensive involvement in synthetic fuel development has shown us the sad consequences of a national energy policy that changes with each day's or year's news. When mideast oil became available in extensive amounts in the 1950's, our nation abandoned its nascent efforts to develop synthetic fuels. When the 1973 oil embargo cut off supplies, Vice President Rockefeller proposed the $100 billion Project Independence, which was then abandoned. After the price of imported oil began to soar again in 1977, Congress in 1978 enacted a 10% energy tax credit for alternative energy property and in 1980 passed the Energy Security Act, which established the Synthetic Fuels Corporation to provide additional financial incentives, principally loan and price guarantees, to stimulate development.

What the press has called the "oil glut" threatens to turn our national policy on its head again. Current optimistic forecasts of future long-term supply and price stability for imported crude oil ignore at least three factors:

(1) that we had a 50% price increase from 1979 to 1980 and this could well happen again;

(2) that in order to return to the relationship between oil prices and prices for other goods and services that prevailed in 1972, oil prices would have to remain at current levels for the next ten years;

(3) that the current price stability is due not only to the reduced demand reflecting low economic activity but depends upon fragile political stability.

Because of the recent strength of the dollar and because oil is priced in dollars, countries such as Japan and West Germany have experienced a substantial increase in their oil import bills. When the mark and the yen stabilize against the dollar, pressure will build again for an OPEC price increase.

Our present dependence on imported oil is simply unacceptable as a matter of national security and foreign policy. In 1970, we imported 10% of the crude oil we consumed, but in 1979, we imported 42% of our crude oil. Even with substantially reduced consumption, we are far removed from even the energy security we enjoyed in 1970.

Now is not the time to discontinue or reduce our nation's commitment to the development of a reliable source of synthetic fuels. The development of this industry will require many years of continued investment and construction. A policy of reduced national commitment will simply put us farther away from our goal.

THE ECONOMIC RECOVERY TAX ACT OF 1981

The Economic Recovery Tax Act of 1981, to which President Reagan, the Congress, and this Committee in particular made major contributions, laid the foundation for a general economic recovery. There is, however, a major area of unfinished business. That area is the continuation and expansion of appropriate energy tax incentives, principally energy tax credits and depreciation of qualified progress expenditures for alternative energy projects. These are issues which you, Mr. Chairman, the Majority Leader, and the Chairman of the Finance Committee recognized on the Senate floor were appropriately reserved for treatment in a second tax bill this year.

In this context, the provisions of S. 750 are a constructive step toward extending the tax incentives necessary to reduce our dependence on imported energy. Energy conservation is an important and cost-effective aspect of a sensible energy policy. Even more important, however, is a need which is not fully addressed in S. 750: the need to extend and rationalize the tax incentives for alternative energy production as part of our comprehensive national energy tax policy.

TAX INCENTIVES FOR SYNTHETIC FUEL DEVELOPMENT

Our projects and a limited number of other projects have moved forward quickly over the last year. Two principal additions to S. 750 are essential if the projects in which we are involved are to proceed to construction.

The Energy Tax Credit

The 10% energy tax credit available to synthetic fuel projects should be extended in time and broadened slightly in scope to correct anomalies in the original legislation. The credit is presently scheduled to expire on December 31, 1982, except for projects which meet the "affirmative commitment" rules, in which case the credit is available until December 31, 1990. To permit the first generation of projects now in the development stage to have a firm economic basis to proceed to construction, the credit should be extended for five years to the end of 1987 and to the end of 1995 for projects that meet affirmative commitment rules.

The affirmative commitment rules themselves, which now require that "all permits" be applied for by a date certain, should be modified to provide that substantially all permits have been applied for. This change would simply recognize that some permits are not appropriately sought until construction is nearly complete and that permitting requirements are subject to constant flux. The change would permit greater confidence that the credit will be available in appropriate cases and will not be subject to loss because of a technical error or regulatory change.

Finally, the coverage of the credit should be expanded to cover equipment essential to the completeness of a synthetic fuel facility. This modification would permit application of the credit to oxygen plants, which are essential to a coal conversion project and are a major item of capital expense which can exceed $100 million.

The Advisory Committee to the House Science and Technology Committee has urged that the credit be extended and expanded. The Research and Policy Committee of the Committee for Economic Development reached the same conclusion after thorough study of the financing required to stimulate a first generation of commercial scale synthetic fuel plants, concluding that

> "the kind of new synthetic fuel plants that are needed will, in most if not all cases, take years longer to construct. Accordingly, if the tax credit is to be effective at all, the period in which it can be taken should be extended."

Progress Expenditure Depreciation

Under current law, the investment tax credit can be taken with respect to qualified progress expenditures for equipment having a normal construction period of two years or more. However, depreciation deductions cannot be taken until a project is placed in service. For a synthetic fuel project involving more than a billion dollars invested over a four to six year construction period, a major penalty is imposed by deferral of the depreciation deduction. The penalty is particularly pronounced in periods of inflation, when capital costs are paid in current dollars, but depreciation deductions must be taken several years later in inflated dollars.

Since the fall of 1980, the principal depreciation reform and "capital cost recovery" proposals would have extended this qualified progress expenditure concept to the depreciation of costs incurred in the construction of qualified property. Provisions for the commencement of depreciation deductions on a progress expenditure basis for assets with a normal construction period of at least two years were included in the original Jones/Conable "10-5-3" proposal introduced in mid-1979. The "2-4-7-10" proposal reported out favorably by the Senate Finance Committee as part of H.R. 5829 on August 21, 1980, likewise contained such a provision, largely due to your efforts, Mr. Chairman. This feature was also included in President Reagan's proposed "Economic Recovery Tax Act of 1981" as introduced by Representative Conable and Senator Dole on March 10, 1981. However, the Administration's revised proposal as introduced on June 9, 1981, and the Economic Recovery Tax Act of 1981 as enacted deleted the provision for the write-off of qualified progress expenditures.

Elimination of the depreciation allowance for qualified progress expenditures has a profound impact on the economics of a typical synthetic fuel project. Whether calculated in terms of real rate of return to equity sponsors or in terms of present value of tax benefits, nearly two-thirds of the tax incentive for synthetic fuel projects provided by the Administration's original proposal arose from the progress expenditure feature.

This effect is also reflected in fuel prices necessary to maintain a baseline rate of return for synthetic fuel projects. In the case of a coal-to-casoline plant, to attain a satisfactory rate of return in the absence of progress expenditure depreciation, the price of the product, gasoline, would have to be more than 20% higher than would be required with the progress expenditure feature. Because of the difficulty of predicting gasoline prices several years in advance, the required price increase would add major uncertainties as to the economic viability of these projects.

The depreciation allowance for qualified progress expenditures was a central feature of earlier capital cost recovery proposals for good reason. It is important to reemphasize that progress expenditure depreciation is a matter of timing, that is, of moving forward the period in which the depreciation is claimed. It is not a new deduction and does not change the amount of the deduction. By moving the depreciation allowance forward, investors in long-term construction projects can receive some "return" of capital during the construction period, through removing the present disincentive for investment in large scale projects with multi-year construction schedules.

CONCLUSION

There have been suggestions that energy tax incentives have already served their purpose. At least with respect to large scale synthetic fuel projects, it is clear that this is not the case. In reliance upon the energy tax credit and in anticipation of a capital cost recovery system that would permit progress expenditure treatment, the prospective sponsors of our nation's first generation of commercial-scale synthetic fuel plants have done extensive engineering, have acquired sites and permits, and have assembled teams of experts. With appropriate tax incentives and, in some cases, contingent forms of financial assistance from the Synthetic Fuels Corporation, American industry will proceed to construct these plants. Our investment bankers have repeatedly advised that tax incentives are essential to attract the equity capital to build large scale synthetic fuel projects and that in their absence, the momentum that has been generated will be destroyed. We will again face an oil supply disruption without having demonstrated to the world our capacity and determination to utilize our vast reserves of coal, oil shale, and tar sands to restore our energy independence.

Thank you again for the opportunity to offer these comments on S. 750 and the direction of energy tax policy. Mr. Chairman, we applaud your commitment to energy tax incentives. We would be pleased to assist you and the Committee to prepare appropriate amendments to S. 750.

Senator WALLOP. Mr. Koleda.

STATEMENT OF MICHAEL KOLEDA, EXECUTIVE DIRECTOR, NATIONAL COUNCIL OF SYNTHETIC FUELS, ACCOMPANIED BY WILLIAM BOARDMAN, TAX ATTORNEY, WHEELABRATOR-FRYE, INC., REPRESENTING NATIONAL COUNCIL OF SYNTHETIC FUELS, WASHINGTON, D.C.

Mr. KOLEDA. I am the executive director of the National Council on Synthetic Fuels Production, and with me today are two gentlemen, Mr. William Boardman and Mr. Carl Bates, tax attorneys here in Washington and members of the council's tax advisory committee.

Mr. Chairman, your hearings on S. 750 are timely and welcome. The council opposes any cuts in the energy investment tax credit and fully supports the provisions of S. 750 that would make the energy investment tax credit a more effective instrument of energy policy. Mr. Chairman, you are to be commended especially for your recognition of the important role of conservation credits and the innovative approach suggested by the qualified industrial efficiency property in section 3 of S. 750.

Tax incentives are also an essential element in the Nation's commitment to accelerate the development of synthetic fuels as an alternative to imported petroleum. It is extremely difficult to attract financing for synthetic fuels projects because of their long term and their uncertain payouts. Investments in synthetic fuels plants are becoming less attractive each day because of the very recent and the likely temporary stabilization of world oil prices; historically, extremely high long-term interest rates, and the lure of likely faster payout investment opportunities in conventional energy sources.

One purpose of the energy investment tax credit is to balance out these disincentives and to increase the attractiveness of synthetic fuels projects to the financial community. Nothing has changed since the enactment of the energy investment tax credit to obviate the need for this invaluable tool. We must not conclude that the energy investment tax credit is obsolete or ineffective. As a practical matter, because of the leadtimes involved, few if any of the projects now under development have reached the stage to benefit from the energy investment tax credit. This is not to say, however, that the availability of the energy ITC is not a critical element in financial planning for these projects.

Mr. Chairman, on behalf of the large membership of the synthetic fuels industry represented, I can categorically state that without the 10 percent energy investment tax credit, the national synthetic fuels effort will be seriously delayed, if not fatally crippled.

In addition, the council supports S. 750 because it would rectify certain inequities in the tax treatment of synthetic fuels plants. Specifically, the council fully endorses and supports section 2(B) of S. 750, which would extend the affirmative commitment dates by 4 years each. Unless the dates are extended, few projects will qualify for the energy investment tax credit because of the extensive time required to complete the design and construction of a commercial scale synthetic fuels plant and because of the complexity, uncertainty, and delays imposed by permitting requirements for such plants.

The second important contribution, Mr. Chairman, of S. 750 is section 5, which deals with the treatment of associated property. Under present law, many categories of equipment which are essential and integral parts of a synthetic fuels production plant have been ruled ineligible for the tax credit because of unduly restrictive interpretations of the law by the Internal Revenue Service. As a result, other equipment at a synthetic fuel or substitute feedstock plant—hydrogen, oxygen equipment, and the like—is excluded from eligibility for the energy credit where the equipment is not directly in the conversion stream.

This interpretation of the present law reduces the effective rate of the energy investment tax credit from 10 percent to perhaps 6 or 8 percent for the typical large coal conversion facility. S. 750 rectifies this situation by defining property associated with alternative energy property as being "reasonably necessary to enable the utilization of an alternate substance."

Finally, Mr. Chairman, let me raise an issue not addressed by S. 750 that warrants serious consideration by this subcommittee. The administration had originally proposed and the Finance Committee had previously supported a payment rule and cost recovery legislation which would have allowed cost recovery for payments made on long leadtime projects to begin in the year in which the expenditure is made during the construction period for the project. However, this provision allowing cost recovery of qualified progress expenditures was dropped before final passage.

Mr. Chairman, in concluding, let me say that the cost of money today is high, the future path of world energy prices is uncertain, other projects with faster, more predictable payout are at hand. In such a climate it is very difficult for the energy corporations to make the $3 to $5 billion per copy commitment to the construction of a synthetic fuels project. But these projects must proceed, the private sector must maintain the lead, and Government must play that sensitive role.

The twin financial pillars on which the Government role rests are the Tax Code and the synthetic fuels corporation. Each is required, each complements the other, and both must be maintained if this national effort is to go ahead. And in the event of a third oil shock, as many of the observers of the world scene predict we are inevitably going to face, we can look back and say we did do at the time what was necessary to enable the private sector to do the job.

Thank you, Senator.

Senator **Wallop**. Thank you very much, Mr. Koleda.

[The prepared statement follows:]

Testimony of Michael S. Koleda, Executive Director, National Council on Synthetic Fuels Production

Mr. Chairman, my name is Michael Koleda and I am Executive Director of the National Council on Synthetic Fuels Production. The Council represents 60 member companies who are either equity participants in synthetic fuels projects, or who will support the industry through project design and construction, equipment manufacture, research and development, or project finance.

Your hearings on S. 750 are timely and welcome, not only to discuss ways of improving federal energy tax incentives, but also to fully address the consequences of repeal of the energy investment tax credit.

The Council opposes any cut in the energy investment tax credit and fully supports the provisions of S. 750 that would make the energy ITC a more effective instrument of energy policy. Mr. Chairman, you are to be commended especially for your recognition of the important role of conservation credits and the innovative approach suggested by the Qualified Industrial Energy Efficiency Property in Section 3 of S. 750.

This morning I would like to address the need for the energy ITC from the perspective of the synthetic fuels industry. Tax incentives are an essential element in the Nation's commitment to accelerate the development of synthetic

FUELS AS AN ALTERNATIVE TO IMPORTED PETROLEUM. ANY PROPOSAL TO REPEAL THE ENERGY ITC REFLECTS A MISUNDERSTANDING OF THIS FACT.

IT IS EXTREMELY DIFFICULT TO ATTRACT FINANCING FOR SYNTHETIC FUELS PROJECTS BECAUSE OF THEIR EXTREMELY LONG-TERM AND UNCERTAIN PAYOUTS. INVESTMENTS IN SYNFUELS PLANTS ARE BECOMING LESS ATTRACTIVE BECAUSE OF A STABILIZATION OF WORLD OIL PRICES, EXTREMELY HIGH LONG-TERM INTEREST RATES, AND THE LURE OF MORE ATTRACTIVE INVESTMENT OPPORTUNITIES IN CONVENTIONAL ENERGY SOURCES.

ONE PURPOSE OF THE ENERGY ITC IS TO BALANCE OUT THESE DISINCENTIVES AND TO INCREASE THE ATTRACTIVENESS OF SYNFUELS PROJECTS TO THE FINANCIAL COMMUNITY. NOTHING HAS CHANGED SINCE THE ENACTMENT OF THE ENERGY ITC TO OBVIATE THE NEED FOR THIS VALUABLE TOOL. IT IS NAIVE TO CONCLUDE, AFTER LESS THAN THREE YEARS, THAT THE ENERGY ITC IS OBSOLETE OR INEFFECTIVE. AS A PRACTICAL MATTER, BECAUSE OF THE LEAD TIMES INVOLVED, FEW, IF ANY OF THE PROJECTS UNDER DEVELOPMENT HAVE REACHED THE STAGE TO BENEFIT FROM THE ENERGY INVESTMENT TAX CREDIT. THIS IS NOT TO SAY, HOWEVER, THAT THE AVAILABILITY OF THE ENERGY ITC IS NOT A CRITICAL ELEMENT IN FINANCIAL PLANNING FOR PROJECTS. MR. CHAIRMAN, ON BEHALF OF THE LARGE SEGMENT OF THE SYNTHETIC FUELS INDUSTRY REPRESENTED BY OUR MEMBERSHIP, I CAN

CATEGORICALLY STATE THAT WITHOUT THE TEN PERCENT ENERGY INVESTMENT TAX CREDIT, THE SYNTHETIC FUELS EFFORT WILL BE SERIOUSLY DELAYED, IF NOT FATALLY CRIPPLED.

THE COUNCIL SUPPORTS S. 750, NOT ONLY BECAUSE IT WOULD RETAIN THE ENERGY ITC, BUT ALSO BECAUSE IT WOULD RECTIFY CERTAIN INEQUITIES IN THE TAX TREATMENT OF SYNTHETIC FUELS PLANTS. FIRST, S. 750 WOULD AMEND THE SO-CALLED "AFFIRMATIVE COMMITMENT RULE" THAT GOVERNS ELIGIBILITY FOR THE ENERGY ITC. TO COMPLY WITH THAT RULE PROJECT SPONSORS MUST HAVE COMPLETED ALL ENGINEERING STUDIES NECESSARY TO BEGIN CONSTRUCTION, AND ALSO MUST HAVE FILED APPLICATIONS FOR ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL AND CONSTRUCTION PERMITS BY DECEMBER 31, 1982. BY DECEMBER 31, 1985 THE SPONSORS MUST HAVE SIGNED BINDING CONTRACTS FOR ACQUISITION AND CONSTRUCTION INVOLVING AT LEAST 50 PERCENT OF THE COST OF ALL SPECIALLY DESIGNED EQUIPMENT FOR A PROJECT.

THE COUNCIL FULLY ENDORSES AND SUPPORTS SECTION 2(B) OF S. 750, WHICH WOULD EXTEND THESE AFFIRMATIVE COMMITMENT DATES FOR FOUR YEARS EACH. UNLESS THE DATES ARE EXTENDED, FEW PROJECTS WILL QUALIFY FOR THE ENERGY ITC, BECAUSE OF THE EXTENSIVE TIME REQUIRED TO COMPLETE THE DESIGN AND CONSTRUCTION OF A COMMERCIAL SCALE SYNTHETIC FUELS PLANT AND

BECAUSE OF THE COMPLEXITY, UNCERTAINTY, AND DELAYS IMPOSED B PERMITTING REQUIREMENTS FOR SUCH PLANTS.

THE SECOND IMPORTANT CONTRIBUTION OF S. 750 IS SECTION 5, DEALING WITH THE TREATMENT OF "ASSOCIATED PROPERTY". UNDER PRESENT LAW, MANY CATEGORIES OF EQUIPMENT WHICH ARE ESSENTIAL AND INTEGRAL PARTS OF A SYNTHETIC FUELS PRODUCTION PLANT, HAVE BEEN RULED INELIGIBLE FOR THE TAX CREDIT. THIS ARISES BECAUSE EXISTING STATUTORY RULES DETERMINING ELIGIBILITY OF EQUIPMENT USED IN THE PRODUCTION OF SYNTHETIC FUELS OR SUBSTITUTE FEEDSTOCKS DEFINE SUCH EQUIPMENT BY USING THE PHRASES "EQUIPMENT FOR CONVERTING" AND "EQUIPMENT TO CONVERT." THE INTERNAL REVENUE SERVICE HAS TAKEN AN UNDULY RESTRICTIVE INTERPRETATION OF THESE TWO PHRASES IN ITS REGULATIONS. AS A RESULT, OTHER EQUIPMENT AT A SYNTHETIC FUEL OR SUBSTITUTE FEEDSTOCK PLANT IS EXCLUDED FROM ELIGIBILITY FOR THE ENERGY CREDIT WHERE THE EQUIPMENT IS NOT DIRECTLY IN THE CONVERSION STREAM.

EQUIPMENT MADE INELIGIBLE FOR THE ENERGY INVESTMENT CREDIT UNDER THIS INTERPRETATION INCLUDES OXYGEN OR HYDROGEN PLANTS; EQUIPMENT TO RECOVER BY-PRODUCTS; EQUIPMENT TO TREAT OR RECOVER WATER, CATALYSTS OR OTHER REACTANTS USED IN THE

PROCESS; EQUIPMENT TO STORE AND TRANSFER BY-PRODUCTS OR END-PRODUCTS AFTER PRODUCTION OR RECOVERY; SPECIAL PURPOSE STRUCTURES TO SUPPORT AND HOUSE QUALIFYING EQUIPMENT; AND EQUIPMENT TO TRANSMIT PROCESS HEAT TO THE ON-STREAM EQUIPMENT OR TO GENERATE AND TRANSMIT ELECTRICITY TO THE ON-STREAM EQUIPMENT. ALL OF THESE TYPES OF EQUIPMENT ARE ESSENTIAL PARTS OF A SYNTHETIC FUEL OR SUBSTITUTE FEEDSTOCK PLANT AND THIS INTERPRETATION OF PRESENT LAW REDUCES THE EFFECTIVE RATE OF THE ENERGY ITC FROM 10 PERCENT TO ONLY 6 TO 8 PERCENT FOR THE TYPICAL COAL CONVERSION FACILITY.

S. 750 RECTIFIES THIS SITUATION BY DEFINING PROPERTY ASSOCIATED WITH ALTERNATIVE ENERGY PROPERTY AS BEING "REASONABLY NECESSARY TO ENABLE THE UTILIZATION OF AN ALTERNATE SUBSTANCE." THIS MERITORIOUS PROPOSAL WILL CLARIFY ELIGIBILITY FOR THE ENERGY ITC TO INCLUDE THESE ESSENTIAL PARTS OF THE SYNTHETIC FUEL OR SUBSTITUTE FEEDSTOCK PLANT AND WILL REFLECT WHAT I PERCEIVE TO BE THE ORGINAL CONGRESSIONAL INTENT OF THE PROVISIONS. FROM A TECHNICAL STANDPOINT, IT ALSO WOULD BE CONSISTENT TO EXTEND THIS ASSOCIATED PROPERTY RULE TO COVER ESSENTIAL EQUIPMENT IN A SHALE OIL FACILITY, INCLUDING THAT NECESSARY TO UPGRADE SHALE OIL TO THE EQUIVALENT OF PETROLEUM.

FINALLY, MR. CHAIRMAN, LET ME RAISE AN ISSUE NOT ADDRESSED BY S. 750 THAT WARRANTS SERIOUS CONSIDERATION BY THIS SUBCOMMITTEE. UNDER THE RULES ENACTED IN THE 1981 TAX CUT LEGISLATION, CAPITAL COST RECOVERY BEGINS ONLY AFTER THE PROPERTY IS PLACED IN SERVICE BY THE TAXPAYER. DUE TO THE LARGE CAPITAL COSTS OF SYNTHETIC FUELS PLANTS AND THE LONG LEAD TIME INVOLVED IN THE PLANNING, DESIGN AND CONSTRUCTION OF SUCH FACILITIES, A COMPANY DECIDING TO INVEST IN A SYNFUELS FACILITY WILL SPEND SUBSTANTIAL SUMS OF MONEY OVER AN EXTENDED PERIOD OF YEARS BEFORE THE PLANT IS PLACED IN SERVICE AND COST RECOVERY BEGINS. THE ADMINISTRATION HAD ORIGINALLY PROPOSED AND THE FINANCE COMMITTEE HAS PREVIOUSLY SUPPORTED, A "PAYMENT" RULE IN COST RECOVERY LEGISLATION WHICH WOULD HAVE ALLOWED COST RECOVERY FOR PAYMENTS MADE ON LONG LEAD TIME PROJECTS TO BEGIN IN THE YEAR IN WHICH THE EXPENDITURE IS MADE DURING THE CONSTRUCTION PERIOD FOR THE PROJECT. HOWEVER, THIS PROVISION, ALLOWING COST RECOVERY OF QUALIFIED PROGRESS EXPENDITURES WAS DROPPED BEFORE FINAL PASSAGE.

MR. CHAIRMAN, ANALYSIS OF A TYPICAL COAL CONVERSION PROJECT INDICATES THAT THE EXCLUSION OF A PAYMENT RULE FOR QUALIFIED PROGRESS EXPENDITURES ON SYNTHETIC FUELS AND SUBSTITUTE FEEDSTOCK INVESTMENT REDUCES THE EFFECT OF COST RECOVERY BY ALMOST 40 PERCENT. THIS WILL CAUSE INCREASES IN PRODUCT PRICES TOTALING APPROXIMATELY $450 MILLION OVER THE LIFE OF THE PROJECT.

The Council consequently supports the adoption of a payment rule that would permit synthetic fuels project sponsors to make use of the enhanced capital cost recovery provisions of the Economic Recovery Tax Act of 1981.

I would like to close, Mr. Chairman, with an observation on the role of the energy investment tax credit in efforts to reduce oil imports. The Congress has created, President Reagan has modified and endorsed, and we support a national policy on commercial synthetic fuels development stressing maximum reliance on the private sector. The federal role in this policy has two elements: tax incentives such as the energy investment tax credit, and contingent project support through the U. S. Synthetic Fuels Corporation. Each element is necessary; each complements the other. It was not the intent of the Congress, nor is it realistic to expect, that financial support from the SFC should be the sole instrument for developing this new industry. Yet this would be the effect of a repeal of the energy investment tax credit. The SFC has an important role to play as a catalyst to help bring the first commercial plants on line. But the energy investment tax credit and capital cost recovery provision of the tax code have an equally important role to help assure an

EVEN GREATER PRIVATE SECTOR INVOLVEMENT IN SYNFUEL DEVELOPMENT. THE REMOVAL OF EITHER CONTINGENT PROJECT SUPPORT OR TAX INCENTIVES WILL EFFECTIVELY DELAY THE RATE OF SYNFUEL DEVELOPMENT THAT THE CONGRESS AND THE AMERICAN PEOPLE FEEL IS NECESSARY AND A MATTER OF HIGHEST NATIONAL IMPORTANCE.

THAT ELEMENT OF NATIONAL SYNFUEL POLICY REPRESENTED BY TAX INCENTIVES CAN BE EFFECTIVELY NEUTRALIZED IN ONE OF TWO WAYS -- EITHER THROUGH OUTRIGHT REPEAL OF THE ENERGY INVESTMENT TAX CREDIT OR BY INTERMITTENT ATTEMPTS AT REPEAL. THE INDUSTRY CANNOT BE EXPECTED TO MAKE THE MULTIBILLION DOLLAR INVESTMENTS NECESSARY FOR SYNTHETIC FUELS DEVELOPMENT IF PROJECT SPONSORS ARE UNCERTAIN THAT TAX INCENTIVES WILL BE AVAILABLE AFTER CAPITAL HAS BEEN COMMITTED TO THE PROJECTS. SOME DEGREE OF CERTAINTY IS NECESSARY FOR FINANCIAL PLANNING FOR PROJECTS. THE APPEARANCE OF A LACK OF RESOLVE ON A NATIONAL SYNTHETIC FUELS PROGRAM WILL EFFECTIVELY BLOCK DEVELOPMENT OF THE SYNTHETIC FUELS INDUSTRY AT A PACE CONSISTENT WITH THE DANGERS POSED BY OUR CONTINUED RELIANCE ON IMPORTED OIL.

THE CHALLENGE TO THE CONGRESS AND TO THE EXECUTIVE BRANCH IS CLEAR: YOU MUST PROVIDE A STABLE INVESTMENT ENVIRONMENT, SO THAT PRIVATE INDUSTRY CAN UNDERTAKE SYNFUELS PROJECTS WITH AN EXPECTATION OF A RETURN COMPETITIVE WITH OTHER INVESTMENT OPPORTUNITIES.

MR. CHAIRMAN, I WOULD BE HAPPY TO ANSWER ANY QUESTIONS THAT YOU MAY HAVE.

Senator **Wallop**. It reminds me of the Yogi Berra quote, "You can't think and hit at the same time." This seems to be a moment when we could indeed think, if we would. When you get in the middle of one of those crises, everybody is having to hit. It is a scramble.

The lack of thinking in the past has put this country in a position where it more and more interferes with the marketplace that it seeks to support in a hands-off way. At this moment in time, if we could just get the country to a position where it has some sense and some purpose in these areas, because an industrial society is not going to live long without energy. It seems to me that in many respects the fabric of the democracy itself depends on stability, because in the absence of reasonably plentiful energy to make the threads of the society function, then the certainty of the guarantees of freedom that we have will be simply removed from us by the scramble to either provide equity or priority, or a combination of those things that may take place. A lot of individual freedoms, a lot of corporate freedom, a lot of the predictability of the American democracy will go in a major crisis. Each one seems to be slightly more troublesome and distorting than the one behind it. I would simply hope that we would have balance in our approach to energy.

Mr. Boardman.

Mr. **Boardman**. Yes.

Senator **Wallop**. Did you have a statement to make?

Mr. **Boardman**. No.

Senator **Wallop**. Senator Durenberger?

Senator **Durenberger**. No.

Senator **Wallop**. A little off the line of your testimony, Mr. Harris. Is that Hampshire project dependent not only on these but on the loan guarantees as well? Or if this were to pass, would that be sufficient to your various commitments in that area?

Mr. **Harris**. Yes. And as I understand, the legislation that was originally drafted, the Energy Security Act, it contemplated the energy tax credits.

Senator **Wallop**. Yes.

Mr. **Harris**. All of the economics that we have put together have been based on that. So it would still require the provisions of the Energy Security Act. If the tax credits are eliminated, then we would require something more than is presently covered for and provided for in the Energy Security Act.

Senator **Wallop**. More than the loan guarantees?

Mr. **Harris**. Yes, that is correct.

Senator **Wallop**. If this were to pass and the loan guarantees weren't to be forthcoming, what would that do?

Mr. **Harris**. I don't believe that the project will move ahead. As I understand, the energy tax credit in most of these projects would amount to about a 20-percent difference in the price required.

Senator **Wallop**. I am sure you have heard from what I have said and what others have said this morning that 20 percent is probably too rich for the palate now, in light of the 10-5-3 ACR. Does that bother you? Obviously, anybody would rather have 20 percent than 10 percent.

Mr. **Harris**. I think the key there would be the resolution of those items to be included. In fact, the 10 percent credit has been reduced to about 6 percent, because the oxygen plant and various other equipment items have not been included. If that gets squared away so that most of the investments are included, then we can live with the 10 percent, I believe.

Senator **Wallop**. And the price of service goes up. We keep seeming to have that happen over here, but it always dies a death in the hours of early morning conferences. I do believe that that is a necessary thing. I don't believe that it is a costly thing.

Senator Durenberger, do you have a statement that you would care to make?

Senator **Durenberger**. When the panel is finished.

All right. We will excuse this panel, and I want to express my appreciation very much.

Mr. **Harris**. Thank you, Mr. Chairman.

Senator **Wallop**. The next panel consists of Paul Coats, director of engineering, the Kahler Co., representing American Hotel and Motel Association, Washington; Mr. Fred Krautkramer, Boder's, representing the National Restaurant Association, Washington; Mr. David Freedman, director of services, Giant Food, Inc., representing Food Marketing Institute; Endicott Peabody, general counsel, National Mass Retailing Institute, New York; Frank D. Register, president of the National Association of Retailer Grocers of the United States in Reston, Va.; John Bailey, vice president of public affairs, Honeywell, Minneapolis, Minn.

STATEMENT OF HON. DAVID DURENBERGER, U.S. SENATOR FROM THE STATE OF MINNESOTA

Senator **Durenberger**. Mr. Chairman, thank you. I know this panel is going to speak specifically to 1288 and other things, but I wanted to start out by thanking you for scheduling the hearings on these two bills which will expand the energy conservation tax credits for industrial and commercial consumers. In the face of proposals by the administration to reduce or eliminate the conservation tax credits which are already a part of the Internal Revenue Code, it takes some wisdom on your part, some courage, and a great deal of persistence to spend a morning like this considering legislation that would expand the conservation credit.

Rather than reviewing the specific provisions of S. 1288, though, I would like to put in perspective the feelings of a number of people on the Senate side, and I think particularly some of us who lived with you through the windfall profits tax bill and the whole process of oil decontrol, and take the opportunity of this opening statement to comment on energy tax credit generally and on the President's proposal that they be repealed or reduced; because there is some significance to the fact that he even made the proposal, whether we enact it or not, that I think it is important that we take into consideration.

This administration clearly believes that the American energy consumer should rely on a marketplace, not the Government, for the proper signals as to future energy prices and energy resources. And that is a philosophy that I can agree with, but I think in a 1981 setting it is a terribly wrong-headed policy. It is a head-in-the-sand policy, and I mean that literally, that does not serve the American public well. It is a policy which diminishes our security and virtually guarantees severe economic dislocations in our future, and we have heard some of that testimony already this morning.

There is no current marketplace for energy resources. This ought to be apparent to anyone who can read the headline. Later this month OPEC is expected to get together and agree on a unified price of $34 a barrel for crude oil, and this decision will set a benchmark for energy prices all over the world. The decision will be a victory for Saudi Arabia. It is a victory for the long-term interests of Saudi Arabia.

There are some who believe that conservation and the resistance to higher prices has put a burden on the world oil market and that OPEC is somehow in disarray or about to go out of business. Nothing could be further from the truth. There is a difference of interests in OPEC. The Saudis have a lot of oil, enough oil to produce at current levels well into the next century. And they have a long-term interest in our dependence on those oil reserves. Conservation and conversion to renewables are a direct threat to that future. Prices so high that consumption is reduced threatens that long-term interest.

Other OPEC nations, however, have smaller reserves. They want all the revenues that they can get, and they want it today, because they are afraid we might take over control of our own energy future. High prices now are in their interest. Our gradual conversion is no threat to them, because their wells will soon run dry.

So, as I say, I believe there is a difference in the interests in OPEC. The Saudi interest, however, has prevailed and will continue to prevail. The Saudis have used their excess production capacity and a price of $32 a barrel to force other OPEC nations with higher prices out of the market. And now that prices have been unified at $34 a barrel, OPEC will return to a plane of stability. The world oil glut will be reduced. Each member of OPEC will be given a share of the contract market, and the cartel will be in control once again.

I suppose these events can be read by the so-called free market types as a confirmation of their policy, but to me the headlines say that Saudi Arabia has the power to unilaterally impose a world oil policy that serves their interests to the exclusion of the market and other nations.

Meanwhile, we are busy here in Washington, unilaterally repealing energy policies that took us several years to construct. We turn not to a marketplace but to a prayer that over the long run our interests will coincide with those of Saudi Arabia. Well, they won't. Our long-term goal must be to reduce our dependence on imported oil. Current Saudi policy, price moderation, is designed to continue our dependence on them and their production of 8½ million barrels a day. And who can say what that policy might be in the future?

So there is no marketplace today, only a continuing need to safeguard the economy of the United States of America and our security against the seduction of momentary lulls in the energy crisis. Along with the strategic petroleum reserve and the emergency petroleum allocation legislation—which you, Mr. Chairman, by the way, have been working on so hard in the Energy Committee—the energy tax credits play an important and an essential role in our policy of energy independence. We designed them that way, and that is the role that they have been playing. They provide, or they did provide until President Reagan made his statement, clear signals to energy consumers and producers about our energy future. These signals are not provided by the marketplace on which the administration would have us rely.

If you consider the price of oil over the last decade, it went from $3 a barrel to $14 in just a couple of months in 1973 and 1974. People in this country took conservation seriously for a few more months after the Arab embargo. We also experienced, however, the deepest recession since World War II. But we recovered. And oil prices have leveled off. People forgot about the energy crisis, forgot about it until the Iranian revolution in 1979. The price then went up to $40 a barrel, again in a few short months, and once again we in America had a recession.

Major American industries now are on the brink of collapse. Detroit did not anticipate the Iranian revolution, and neither did their consumers. There weren't any signals anywhere in the energy marketplace. In fact, the marketplace was reducing inventories right up until the day of the revolution. Is that the kind of energy future that this administration would prescribe for our economy? I hope not.

We can admit, Mr. Chairman, that Government policy was part of the problem in 1979 and that a decade of price controls masked the true danger of OPEC, even after the embargo. But the failure of one policy does not mean that every policy that we enact is doomed to failure. We began the process of decontrol in 1979 when we started to correct the errors of past policy. The Finance Committee, in designing the windfall profits tax, replaced the price controls with a different policy. Rather than keep the low prices of the past, we enacted the credits to anticipate higher prices in the future.

We will never break OPEC. Oil is a limited resource that will continue with or without further disruptions to get more expensive. And rather than wait for the roller-coaster effects of the energy marketplace to triple the prices again, we in this committee and this Congress chose to subsidize those conservation and renewable fuel technologies that have promise of immediate benefits.

The subsidies are designed to take us on a smoother path to an energy future that does not include the oil reserves of Saudi Arabia. The tax credits are designed to do what the marketplace does not do: send signals to rational consumers and rational producers about future energy prices.

It is not that I don't believe in the marketplace. I do. That's why we supported decontrol, the windfall profits tax, and credits financed thereby. I just don't think that this administration understands the marketplace. No financial institution is going to loan money for alcohol plants today. The price of alcohol is still above the price of gasoline. And we just heard about synthetic fuel. We all know that this price relationship is going to change but no one can say with any certainty when that change will occur. The energy marketplace sends us no signal, because the change awaits the outcome of political events.

The price of this policy in the short run, to me, is the price of our security, and it is an insurance policy for our economy. So, Mr. Chairman, whatever we do about S. 750, which I support strongly, and S. 1288 which I have authored, I hope we get them in the Code in the next Revenue Act, because we must resolve the status of the existing credits quickly.

A proposal by the President does not eliminate the credits, but it can make them largely ineffective. Few companies are going to take the risks with alcohol plants, new businesses in solar and wind energy, or plan new hydro- and geothermal facilities if there is any possibility, to say nothing of one that comes from the President of the United States, that the credits may soon be repealed. So the President's proposal, unanswered, can be the kiss of death.

The investments that the credits are designed to encourage will evaporate if we don't make it clear that our commitment to them remains stronger than ever. A resolution has been introduced in the House and one is circulating currently on the Senate side to express the sense of the Congress that the existing conservation and solar credits should be continued. And I think, Mr. Chairman, that we ought to get those resolutions passed before the end of this session. And I hope that you and other members of this subcommittee will join me in making this our highest priority over the next few weeks.

I thank you for patiently listening to that recitation of my sense of frustration, I guess, with those who pretend to make energy policy at the governmental level in this country. And I thank you, in particular, for scheduling these hearings and for giving me the opportunity to express these views.

Thank you very much.

Senator **Wallop**. Senator, thank you very much. I appreciate your words. I think it should be in, by looks at the energy marketplace. Even if the world price of oil were a marketplace price and not a contrived price, we still would have a domestic distortion in our own energy marketplace with subsidies for production in some areas, and subsidies for consumption in some areas. Natural gas is the most obvious, but there are others.

I support the production incentives, but I view this as a production of energy as an incentive. I thank you for your words.

Mr. Coats.

STATEMENT OF PAUL COATS, DIRECTOR OF ENGINEERING, KAHLER CO., REPRESENTING AMERICAN HOTEL AND MOTEL ASSOCIATION, WASHINGTON, D.C.

Mr. **Coats**. Mr. Chairman and members of the subcommittee, my name is Paul Coats, and I am director of engineering for the Kahler Corp. out of Rochester, Minn. I appear here today before you as a representative of the American Hotel & Motel Association. A.H. & M.A. is a federation of hotel and motel associations located in 50 States and representing 7,500 hotel and motel properties, accounting for over 1 million rentable rooms. The association strongly supports the enactment of S. 1288, the commercial business energy tax credit bill introduced by Senator Durenberger of Minnesota.

Prior to the Arab oil embargo, A.H. & M.A. instituted programs aimed at educating its members about the wisest use of energy. Since those early days the association has created an executive engineering committee, an energy task force, the Hospitality, Lodging & Travel Research Foundation, and an energy-technical center. Through the efforts of these organizations have come manuals, periodicals, detailed studies of energy news in the hotel/motel industry. I have copies of these manuals and these various publications with me, Mr. Chairman.

We feel that as a result of the publication of these energy-management manuals, and so forth, that the energy consumed in the hospitality industry was decreased by 25.6 percent since 1977, according to information compiled by the Energy Technical Center and reported to the Department of Energy.

While everything we have done so far is for the good, much more can be done by a greater reliance on the energy-saving equipment that is on the market. S. 1288 will provide the needed incentives, especially to our smaller properties, to save even greater amounts of energy.

It should be remembered that the average size of the properties in the hotel/motel industry is approximately 135 rooms. Seventy percent of the A.H. & M.A. membership are 150 rooms or less. As we all know, the present economic climate which is stifled by high interest rates makes it nigh impossible for the majority of our small operators to justify needed capital investments. S. 1288 provides some relief for our operators to purchase energy-saving equipment.

In reviewing S. 1288, we are gratified to see that with respect to the automatic energy-savings devices the bill would make that type of equipment available for energy tax credits. The decision by the IRS not to permit such equipment a credit has, in our view, gone contrary to the congressional intent. While everything in S. 1288 has applicability toward industry, let me discuss two areas to show you energy savings to be realized by properties in our industry.

Reset controls are used in constant-volume systems serving multiple zones. There are many of these constant-volume systems serving public lobbies, meeting rooms, and so on, which at other than designed times cause overcooling of conditioned space, which in turn will require energy to compensate for the overcooling. The reset controllers measure individual space temperatures and, through an analyzer, reset the discharged air temperatures from the central air handling unit to prevent overcooling. This new energy technology would be useful in our properties because individual studies for facilities with the older type of systems indicate that an average of 10° F. of reheat would be required for air supply to these systems. Assuming the system operates 12 hours a day and 365 days per year, and assuming that the boiler efficiency is at 70 percent, approximately 67,600 cubic feet of natural gas or 492 gallons of No. 2 oil will be required to compensate for the 10° F. of overheating per 1,000 square feet of space served.

Next is the oil burner replacement. Replacement of the old-type rotary cup power boilers with a new pressure-atomizer type burner, and adding combustion controls would help in our industry by changing the operating efficiency from approximately 60 percent to the area of 80-percent-plus efficiency. Assuming that the existing boiler operates at 60-percent efficiency, and that with the new controls and burners the efficiency will be increased to 80 percent, this 20-percent increase represents a 25-percent reduction in the amount of fuel required to produce 1 million Btu's of usable heat.

In conclusion, we feel that S. 1288 is a bill that would definitely promote energy conservation and is in the national interest. The hotel/motel industry, which is an employer of over a million workers, also believes that the type of equipment which qualifies for a credit under this bill would not result in any loss of jobs, rather it would serve to provide jobs in manufacturing, in installation of the equipment, and in keeping our properties operating efficiently.

Senator WALLOP. Thank you very much, Mr. Coats.

[The prepared statement follows:]

SUMMARY
OF THE
AMERICAN HOTEL & MOTEL ASSOCIATION'S STATEMENT
ON
S. 1288

I. Association's Involvement in Energy Conservation

1. Executive Engineers Committee
2. Energy Task Force
3. Hospitality, Lodging & Travel Research Foundation

II. Reasons for our Support of S. 1288

1. Will better industry's energy conservation programs
2. Help especially smaller properties
3. Discussion of newly defined property which holds most promise for us

III. Conclusion

1. Bill is in the national interest
2. Will not result in any dislocation of employment

Mr. Chairman, Members of the Subcommittee:

My name is Paul Coats and I am the Director of Engineering for The Kahler Corporation, Rochester, Minnesota.

I appear before you this morning as a representative of the American Hotel & Motel Association.

The American Hotel & Motel Association is a federation of hotel and motel associations located in the fifty states, the District of Columbia, Puerto Rico and the Virgin Islands, having a membership in excess of 7,500 hotels and motels accounting for over one million rentable rooms. Inclusive in our membership are all of the major hotel and motel chains.

We appreciate the opportunity you have afforded us to appear and present views on the bill, S. 1288.

AH&MA strongly supports S. 1288.

As an industry acutely affected by energy, we believe that S. 1288 will help us to continue to improve in the important area of national concern, namely, energy conservation.

AH&MA has, even prior to the Arab Oil Embargo, been working diligently to educate its members about the importance of wisely using energy.

Within the Association, we have an Executive Engineers Committee, Energy Task Force and the Hospitality, Lodging and Travel Research Foundation.

I am Chairman of the Executive Engineers Committee. This Committee consists of engineers representing:

Hilton International
Inter-Continental Hotels
Rockresorts, Inc.
Westin Hotels
Stouffer Corporation
Hershey Entertainment & Resort Company
Sheraton Corporation
Quality Inns International, Inc.
AMFAC Hotels
Howard Johnson Company
Radisson Hotel Corporation
Affordable Inns, Inc.
Marriott Hotels
Hyatt Hotels Corporation
Harley Hotels, Inc.
Days Inns of America
Winegardner & Hammons, Inc.
Econo-Travel Motor Hotel Corporation
Hilton Hotels Corporation
Americana Hotels
Holiday Inns, Inc.
and
The Kahler Corporation

As you can see all sizes of hotels and motels are included within this group.

Today, the role of the Energy Task Force is essentially that of providing support to the states and at the national level on matters relating to energy policy, regulation and utility hearings. The membership of the Committee provides a cross-cut of the industry with an expression of concern for management and technical aspects of energy management.

The Hospitality, Lodging & Travel Research Foundation is an affiliate of the American Hotel & Motel Association and was established as a non-profit organization on May 12, 1972, for inaugurating and implementing management research, programming, education and on-premise operating techniques.

In 1975, the Foundation took responsibility for developing an energy management program which further seeks to involve both employees and guests in a commitment to energy conservation through a personal involvement and concern.

An energy conservation manual "A Tool of Energy Management" was developed by the Foundation in conjunction with the Energy Task Force and was distributed through the American Hotel & Motel Association in October 1976 and was revised in 1977. Over 3,000 copies have been sold through four printings. This revision includes an energy inventory and review appendix and the copy was available to the industry in early 1978.

A second volume of this publication, "Energy Maintenance Manual" was published in November 1979.

Energy conservation tent cards and decals were initially available under the Energy Task Force. Currently, the Foundation has designated this as a function that will continue at the individual hotel and motel level, with the item developed in accord with specific needs.

In June 1977, the Foundation established and funded the Energy Technical Center. This Technical Center serves the industry, government agencies and other interested parties with energy data as requested.

The Energy Technical Center is providing energy management information as a "Department" of LODGING magazine on a regular basis.

The Center has contributed significantly to the development of the energy inventory review section; the Blueprint for Energy Management in the Smaller Hotel or Motel; Energy Maintenance Manual-Volume II and special reports including:

"Analysis of the Energy Use of 327 Hotels & Motels - 1978"

"Analysis of the Energy Use of 284 Hotels & Motels - 1979"

The Energy Technical Center collects, evaluates and completes an annual report on loding industry consumption for presentation to the Department of Energy and other interested parties.

While all the efforts primarily alluded to have been important and will be continued, the time is now to foster the purchasing of new energy saving equipment which is on the market. S. 1288, we believe, is the impetus the commercial sector needs.

The Energy Tax Act of 1978, was good legislation and in the national interest; but unfortunately, too narrow in scope as to afford any real opportunity for those of us in the commercial sector to take advantage of.

In fact, the one area which showed promise, the area dealing with "automatic energy control systems", has been denied us by the Internal Revenue Service.

We wrote the Commissioner on November 17, 1980, regarding a proposal for comment by IRS on this issue setting forth our view that it was Congress' intent in the Conference Report on the Energy Tax Act of 1978 to make "automatic energy control system" equipment eligible for a credit.

The Congressional Research Service, had prepared a report for the House Committee on Energy and Commerce (Committee Print 97-Q), which clearly pointed out the energy saving usefulness of such systems.

Unfortunately, IRS action denying the credit has made a difference in our industry with respect to purchasing such equipment especially among our smaller members. It should be noted that smaller properties have less public space and virtually all room areas. Therefore, savings would be appreciable for properties of this type.

In reviewing S. 1288 as it relates to Section 2 "Specially Defined Energy Property" we can see applicability to our industry in all newly defined property especially the following:

(M(i))

Reset controls are used in constant volume systems serving multiple zones. There are many of these constant volume systems serving public lobbies, meeting rooms, etc., which, at other than design times, causes over-cooling of a conditioned space, which in turn will require energy to compensate for the over-cooling. New reset controls measure individual space temperatures and, through an analyzer, reset the discharge air temperature from the central air handling unit to prevent overcooling. This new technology would be useful in our properties because individual studies for facilities with the older type of system indicate that an average of 10 degrees fahrenheit of reheat would be required for air supplied by these systems. Assuming the system operates only 12 hours per day and 365 days per year, and assuming that the boiler efficiency is at 70 percent, approximately 67,600 cubic feet of natural gas, or 490 gallons of No. 2 oil will be required to compensate for 10 degrees fahrenheit of over-cooling per 1,000 square feet of space served.

(M(ii))

Economy cycle is a system in which outside air is utilized for cooling at times when the outside air temperature is below that of the occupied space. Considering, for instance, that in Chicago only 988 hours of the normal 3,672 hours per cooling season have temperatures of 75 degrees fahrenheit and above, indicates that there are many hours when outside air can be used to reduce the mechanical refrigeration requirements. The above data is based on U.S. Air Force Publication AFM-88-29. Assuming the average outside air temperature of 65 degrees fahrenheit and 75 percent relative humidity, a conservative estimate of savings that may be realized through an economy cycle will be approximately 16,240 BTU's per hour, per 1,000 square feet of condition space.

Enthalpy control is a device which measures total heat content, both sensible and latent heat and when this control is utilized in air handling systems, it automatically controls when outside air should be utilized for the air conditioning and would be useful to hotels and motels.

(M(iii))

Radiation control has applicability to our industry because it can provide for individual room control, which, in turn, will reduce over-heating. Over-heating is caused by such factors as solar gain, occupancy level in the space, lights, etc. Based on the normal heating season from October 1 through

April 30, a room with an exterior wall surface of 120 square feet, including a 20 square foot double-glazed window and a central boiler operating at 70 percent efficiency, and an average of 5 degrees over-heat, will consume approximately 1,380 cubic feet of natural gas or 10 gallons of No. 2 fuel oil per heating season.

(M(vi))

Variable speed motor controls are utilized to reduce air supplied and/or exhausted from facilities, pumping systems, etc. As an example, if at off-periods the fans supplying and/or exhausting air could be reduced to supply only half of the design CFM and based on the variable speed control, the horsepower will be reduced to approximately 1/8 of the design horsepower required for the design CFM. The above is based on the fan laws. It should be noted that each horsepower requires approximately 1 kilowatt hour. Hotels and motels believe that this type of equipment would contribute to significant energy savings.

(P)

Replacement of the old type rotary cup power burner with new pressure atomizing type burners and adding combustion controls would help in our industry by changing the operating efficiencies from approximately 60 percent to the area of 80 percent plus efficiency. Assuming that an existing boiler operates at 60 percent efficiency and that with the new controls and burner, the efficiency will be increased to 80 percent, this 20 percent increase represents a 25 percent reduction in the amount of fuel required to produce one million BTU's of usable heat.

Additionally, we very much believe that Section 3 dealing with insulation will rectify a problem with the 1978 Act wherein only residential property qualified for an insulation credit.

Prior to the energy crisis in this country, it was a common practice to delete insulation on domestic hot water heaters and on hot water heating service piping. At the time, this practice appeared to many to be viable in that energy costs were relatively cheap when compared to the cost of the installation, etc. Facilities in which these piping systems have not been insulated are consuming energy due to the loss from the piping systems and then consuming energy again to compensate for the heat gain in areas in which these losses occur. Example of potential energy savings by adding 1 inch thick insulation on 1 1/2 inch steel pipe operating at 180 degrees fahrenheit is 11,500 BTU's per 100 lineal feet of pipe. Potential savings from adding insulation to 1 1/2 inch copper pipe conveying 120 degrees fahrenheit domestic water is approximately 4,500 BTU's per hour per 100 lineal feet of pipe.

While I have listed a few of the energy management techniques which are specified in S. 1288, it is my feeling that all the various conservation techniques and management systems will, most certainly, provide an incentive to all our industry especially to the small property managers to proceed with the installation of better and more energy efficient equipment and systems within their property.

In conclusion, we feel that S. 1288 is a bill that would definitely promote energy conservation and is in the nation's best interest. The hotel/motel industry which is an employer of over one million workers also believes that the type of equipment which qualifies for a credit under this bill would not result in any loss of jobs. Rather it will serve to provide jobs in manufacturing, the installation of the equipment, and keeping our properties operating efficiently.

Senator WALLOP. Mr. Krautkramer.

STATEMENT OF FRED KRAUTKRAMER, BODER'S, REPRESENTING THE NATIONAL RESTAURANT ASSOCIATION, WASHINGTON, D.C.

Mr. KRAUTKRAMER. Thank you, Mr. Chairman, Senator Durenberger and members of the subcommittee. It is an honor to appear before you this morning. My name is Fred Krautkramer. I am part owner of a family-operated restaurant located in Mequon, Wis., a northern suburb of Milwaukee.

Today I am representing the National Restaurant Association. They have approximately 10,000 members who operate more than 110,000 establishments across the country. Basically, most of these operations are small businesses. In fact, some 87 percent have sales under $500,000. As you probably know from your dining out experiences here in Washington—I ate here last night—you have a lot of small operations, too, and a lot of good restaurants. Many of these structures were built before the big energy crunch in the early 1970's, and many of them have outdated equipment. It may be perfectly good equipment, but it is outdated as far as energy consumption goes.

Every one of these operations is aware of the need to conserve energy. Energy costs for the average restaurateur have risen from 1 to 2 percent of gross sales in 1972 to around 5 to 7 percent at present, and some much higher. And that is why I am here today, to encourage enactment of legislation that will help the individual entrepreneur make investments to retrofit his operation.

We think the energy tax credit concept that you are proposing, sir, is the best approach because it allows the individual operator a nondirective approach, and he can select the equipment that could help him the most. This is particularly important for our operation, because we are a lot of different types of people. And we thank you for cosponsoring this legislation.

This morning I would like to give you a brief description of what I have done in my small restaurant and how your tax credits would be needed by me, and how I could use them. I also plan to quickly summarize my longer statement which I request be placed in the hearing record.

I represent the third generation of a 52-year-old family-operated restaurant, the same family. I am the son-in-law of the second owner. By all definitions, we are a small business. We gross approximately $1.3 million annually and have 70 to 80 employees. Basically, we became involved in energy conservation because we use as much energy in our restaurant—and mind you, we are not that big—as the 70-home subdivision that is right next door to me. And I live in that subdivision.

Approximately 5 years ago I had an electric bill that hit $3,000 a month, and I said "Wait a minute. That's it. That's enough." And we began to conserve. Now, fortunately for me, I am an electrical engineer. And what I am doing in the restaurant business, we could discuss that for a long time.

But that has helped me considerably with a lot of our energy conservation efforts. I talked our Wisconsin Gas Co. into using their infra-red scanner for a program I put on for our local restaurant association. So they came in and scanned my whole building, thank God, for nothing, because of the program, and we subsequently insulated, caulked, and regasketed. That was quite a job considering we had an 1840 building to start with. From there we went on to sophisticated efforts such as preheating our hot water with heat taken off the refrigeration compressors, and we use timer controls for our dishwasher. We became involved in balancing the air flows in the kitchen and the dining room. I personally designed economizers for our air conditioners and designed a makeup system for our kitchen hood. We extensively relamped the entire restaurant and installed energy-saving dimmers which are now on the market, and other things, but all basically small, simple, low-cost things that I could do as we went along.

The total cost of these modifications was approximately $6,000 over a 3- to 4-year period. We achieved savings of double that. Now, I know that is not $100 million, but for me and 500,000 other small operators like me, that is a lot of money. In fact, we lowered our energy use per customer 30 percent. Per customer.

Now the only major expense I got involved in was one black box, OK, a load-shedding device that actually paid for itself in 8½ months. Now I was able to achieve much greater savings than the local operators because of my expertise in electrical engineering.

Future significant energy savings in my restaurant can only be achieved now with a very great cost in equipment and long payback periods. We remodeled our kitchen in late 1975. I wish we had done it 4 years later, but we did it in 1975. We spent $179,000. For us it was a big chunk of the dollars. Now I've got a 6-year-old, top-of-the-line dishwasher, for example, which operates perfectly, and yet I should replace it with a more energy-efficient model. I would not be replacing it because it doesn't work right; I would be replacing it with a more energy-efficient model. Unfortunately, it is going to cost me $10,000 plus installation to do that. And that is difficult for me, as a conservative businessman, to justify that kind of a choice. It is marginally unaffordable, or marginally affordable.

Another example we have is a $24,000 6-year-old stainless steel hood which should be replaced with a real energy-efficient model that cleans the air and pumps it back in to heat the restaurant. And yet that is a $30,000 to $50,000 expense for me. And that is a lot of money. I could go on, with ovens, roll warmers, fryers, all kinds of things.

Taking my one small establishment—and I will try to conclude briefly, gentlemen—we estimate that we can save a minimum of 20 and possibly 50 percent of all the energy used in commercial establishments, just based on what we have done. That is the equivalent of approximately 60 million barrels of oil.

The commercial sector was overlooked in the 1978 legislation, and S. 1288 corrects that inequity. I think all small operators, as you gentlemen have both said earlier, support energy independence, and we would be willing to go along with gas decontrol and all the rest of it if we had a little help in getting over the hump on replacing equipment that is 10 or 12 years old and getting it so we can function, so we don't go bankrupt, essentially.

In our small suburb of 30,000 people there are 6 out of 10 restaurants that are for sale today. Part of the reason they are for sale is that they can't keep up with the costs, and part of those costs are energy, and they can't afford to replace the items. I heard the Treasury statement earlier this morning. I think having 6 restaurants go bankrupt costs us more money in taxes—6 out of 10—than it costs us in energy tax credits.

So our statement describes the things we support and the equipment that we believe dovetails into your proposal, Senator. And I thank you very much for listening to me today.

Senator WALLOP. Thank you, Mr. Krautkramer.

[The prepared statement follows:]

STATEMENT PRESENTED BY
THE NATIONAL RESTAURANT ASSOCIATION
TO THE
SENATE FINANCE SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
ON S. 1288
"THE COMMERCIAL BUSINESS ENERGY TAX CREDIT ACT OF 1981"
OCTOBER 19, 1981

I.

A. Introduction

Mr. Chairman, members of the subcommittee, it is an honor to be here before you this morning. My name is Fred Krautkramer. I am the third generation owner of a 52-year-old, family operated restaurant located in Mequon, Wisconsin, a suburb of Milwaukee. The restaurant is housed in a building, part of which was constructed in 1840, in one of the colder regions of the United States. I also, by training, am an electrical engineer. Today I am representing the National Restaurant Association and am accompanied by members of the Association's staff, Ms. Sheila Bamberger, Legislative Representative, and Mr. Kent Howard, Energy Consultant.

The National Restaurant Association is a trade group representing 10,000 members who operate more than 110,000 foodservice establishments of every type, size and menu assortment in the United States and 37 foreign countries. The association, with headquarters in Washington, D.C. and offices in Chicago, Illinois, offers programs in public affairs, education and research to its member companies. The industry is composed of 559,000 separate units, 386,000 of which are eating and drinking places. These eating and drinking establishments represent smaller enterprises with 94 percent having sales under $500,000. The foodservice industry employs about 8 million persons and total sales for 1981 are estimated to be $125.6 billion, or nearly 5 percent of the Gross National Product.

Since the oil embargo of 1973 and the Iranian crisis of 1978, the foodservice industry has had an intense interest in energy availability and in private and government programs to encourage development of new supplies, conservation and appropriate planning for emergencies.

Today I am here to talk about the conservation aspects of the energy equation and to encourage you to enact legislation that will spur a more rapid conversion to energy efficiency in the commercial, sector of the economy. The "Commercial Business Energy Tax Credit Act of 1981," S.1288, introduced by Senator David Durenberger and cosponsored by seven of his distinguished colleagues, Senators Symms, Weicker, Specter, Boschwitz, Cochran, Heflin, and Goldwater, would help assure this rapid conversion to energy efficient operations.

I.

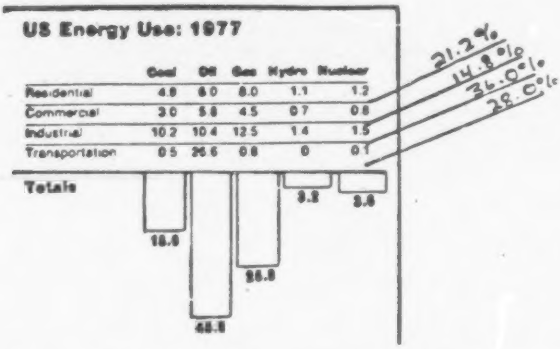
B. U.S. and Commercial Sector Energy Usage

Source for energy data: Energy consumption and production data used in this statement is based on figures taken from the Federal Energy Data System (FEDS) Statistical Summary Update published yearly by the Energy Information Administration and from the U.S. Department of Commerce. Any calculations and/or assumptions will appear as appropriate, and years will be indicated in parentheses.

United States Energy Usage (1977):

To provide some perspective on commercial sector, then foodservice energy usage, we need to look at total U.S. energy usage. In 1977, the U.S. consumed 76.33 quadrillion (10 to the fifteenth) BTUs from all energy sources. Petroleum and petroleum products accounted for 37.12 quadrillion BTUs or 6.73 billion barrels of oil per year. Domestic production of petroleum and petroleum products came to 17.45 quadrillion BTUs in 1977. Imports amounted to 18.76 quadrillion BTUs or more than half the oil supply. According to U.S. Department of Energy statistics, usage on a percentage basis for that year by the four major sectors of the economy was as follows:

Industrial - 36.0 percent
Transportation - 28.0 percent
Residential - 21.2 percent
Commercial - 14.8 percent



In Section II of this statement 1979 figures are used and show commercial businesses using almost 16 percent of total U.S. energy. Statistics indicates that commercial energy use is on the increase as a percentage of the whole. (See Appendix I for consumption of energy by the U.S. commercial sector).

Identification of the commercial sector: There is a great deal of confusion about what makes up the commercial sector of the economy. The U.S. Department of Energy's (DOE) Energy Information

Administration classifies the commercial sector as everything that consumes energy exclusive of the residential, industrial, and transportation sectors. The American Gas Association uses another configuration. For the purposes of this bill, S. 1288, the U.S. Department of Commerce's Standard Industrial Classification Codes (SIC Code) 50 - 99 which cover wholesale and retail trade establishments, finance, insurance, and real estate establishments, rental apartments, and the service establishments. (See Appendix II).

SIC Code Business (Commercial) Enterprises (1975)

To give you an idea of the number of buildings that could benefit from the tax credits, the following statistics are offered breaking out commercial establishments from the total, and then identifying a portion of the foodservice industry that is identified as eating and drinking places.

Number of industrial and commercial proprietorships, partnerships, and corporations:

Total	13,978,000
Commercial Businesses	8,261,000
E&D Places	291,052

Commercial enterprises account for 59.1% of the total U.S. enterprises. Eating and drinking place enterprises make up 3.5% of the commercial group.

Business receipts of all industrial and commercial proprietorships, partnerships and corporations:

Total	3,605,630 (3.6 trillion)
Commercial	1,717,213 (1.7 trillion)
E & D places	46,241 (46 billion)

Commercial enterprises account for 47.6% of total business receipts. Eating and drinking places constitute 2.7% of total commercial receipts. (See Appendix III for total cost valuation of buildings in the United States) The numbers and varieties of commercial sector buildings under a non-directive tax credit program offers an excellent strategy to provide incentives for conservation that can be carried out on an individual basis.

Estimate of the amount of the energy wasted in the commercial sector:

The U.S. Department of Energy estimates that approximately 40% of the energy used in commercial buildings is energy that is wasted. This figure is the result of testing done by the DOE on energy consumption in buildings (for restaurants, the JOLLY TIGER, Colonie, New York) and was phase II of the Department's Building Energy Performance Standards (BEPS) program.

It is important to note that DOE has identified four major options to reduce the 40% waste factor. These options and their estimated savings potential are listed below:

Efficient Energy Management (black boxes)	15% savings
Energy Efficient Equipment	5% savings
Retrofit (HVAC included)	10% savings
Construct New Facility	10% savings

Of these four approaches, tax credits in S. 1288 would apply to the retrofit, energy efficient equipment and energy management (black boxes) categories which could account for a 15-25% savings depending on the configuration chosen by the individual facility operator.

II. Foodservice Energy Usage

Again, as background, specific statistics are provided on the types of energy used by foodservice establishments and what that energy is used for.

A. The types of energy used by the foodservice industry are shown in the following tables taken from a February 1981 survey by Restaurant Business Magazine (50% response rate in 1,000 questioned.)

The Primary Source of Restaurant Energy **Table 1**

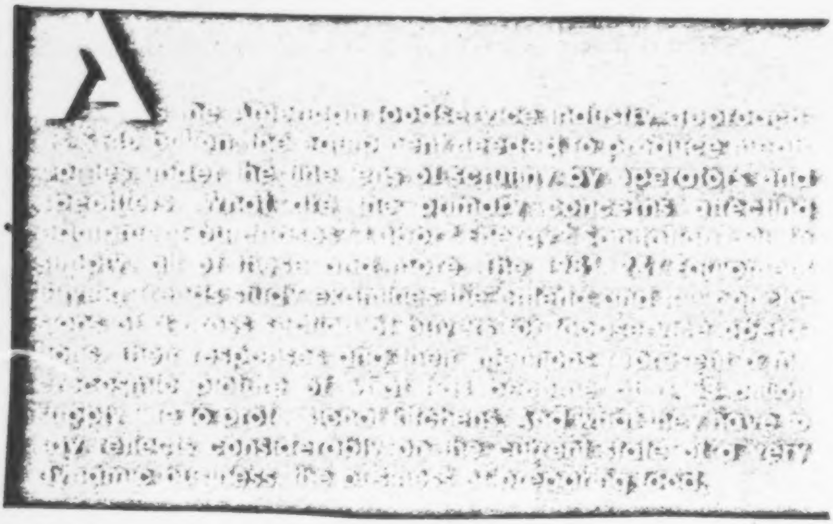
Source of Energy:	Natural Gas	Propane Gas	Oil	Electric
Area of Utilization:	%	% (percent of operators)	%	%
Kitchen				
Cooking	66	11	—	23
Make-Up Air*	22	1	1	77
Main Hot Water*	64	7	5	23
Booster Hot Water	32	13	2	63
Room Heating	60	4	9	26
Room Air Conditioning	11	—	—	89
Dining Room				
Heating*	60	5	9	27
Air Conditioning	10	—	—	89

The difference in energy use by function is shown for full service and fast food operations in the following table.

Energy usage by function

	Full Service	Fast Food
Food Preparation	45.1%	27.0%
Sanitation	12.6%	5.0%
Lighting	8.2%	26.0%
Refrigeration	2.0%	6.0%
HVAC	32.1%	36.0%
Total	100%	100%

B. Estimate of the foodservice industry's potential to save dollars and BTUs with S. 1288. Restaurants and Institutions Magazine 1981 Equipment Use Study completed in June 1981 makes the following introductory statement:



This table compares 1979 and 1980 energy cost compared to total cost for various types of foodservice establishments. The trend to increased energy cost is unmistakable.

ENERGY TAKES A BIGGER BITE OF TOTAL COSTS

The cost of energy in American foodservice has been rising steadily for the past several years. Across the total industry, operators are indicating higher percentages to total costs. Percentages for 1979 are in parentheses below.

Percentage to total food-service costs	Total	Fast food	Full service	Hotel motel	Retail	Recreation	Health care	School	Colleges universities	Employee feeding
1 to 5%	42 % (51)	51.6% (63.5)	45.9% (56)	26.1% (37.5)	*	*	28.6% (37)	25.6% (25.6)	37.5% (47.6)	46.7% (38.5)
6 to 10%	26.9 (21.7)	28.6 (22.2)	28.4 (17.4)	30.4 (41.7)	*	*	25 (18.5)	23.1 (28.2)	25 (19)	1 3.3 (15.4)
11 to 15%	8.4 (8.6)	4.8 (4)	6.4 (9.2)	34.8 (8.3)	*	*	7.1 (11.1)	12.8 (20.5)	7.5 (9.5)	6.7 (7.7)
16 to 19%	3.7 (3.4)	3.2 (*)	.9 (3.7)	6.8 (6.6)	*	*	7.1 (11.1)	2.6 (2.6)	12.5 (4.8)	* (15.4)
More than 20% or no response	19 (15.3)	11.8 (10.3)	18.4 (13.7)	2.1 (5.9)	*	*	32.2 (30.3)	35.9 (23.1)	17.5 (19.1)	33.3 (23)

*Sample group was too small to yield statistically valid data

38-JUNE 1, 1981

If we take the $140 billion annual sales as estimated in this survey and assume a conservative 5% of sales is spent on energy, then we can estimate that the foodserivce industry will spend --

5% of $140 billion or approximately $7 billion on
energy in 1981.

With cost effective investments in energy conservation improvements such as those listed in S. 1288, it is estimated that one-half of the wasted energy or 20% of utility costs can be saved. Energy Savings in the foodservice industry could then equal --

20% of $7 billion or approximately $1.4 billion
dollars per year.

If you assume $34 per barrel of oil today, then --

$1.4 billion savings is equivalent to 40 million
barrels of oil equivalent (BOE) could be saved per
year by the foodservice industry.

It is estimated that the foodservice industry uses approximately 2% of the nation's energy. In 1979, according to DOE this would represent:

Total US Energy 1979 Usage	Foodservice Industry 1979 Usage
78.2 quads*	1.5 quads*

If we apply the S. 1288 20% savings factor to 1 1/2 quads of energy, the foodservice industry alone in the commercial sector, could probably save approximately 1/3 of a quad of energy which is equivalent to approximately:

60 million barrels of oil equivalent (BOE)

Thus we can approximate that the energy dollar and energy BTU (S. 1288) savings from enactment of S. 1288 by the foodservice industry has the potential to save between 40 to 50 million barrels of oil equivalent per year and approximately 1 1/2 billion dollars per year in energy costs at today's prices.

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*a quad = 10 to the fifteenth power BTU which is the approximate energy used by a metropolitan area such as San Francisco and Oakland in one year and also equal to the energy equivalent of 172.4 million barrels of oil.

C. The Foodservice On-going Energy Conservation Programs

As part of an overall conservation effort the foodservice industry has instituted a number of conservation programs for the industry. These programs teach the operator how to take the initial steps to energy efficiency. S. 1288 would help take them to the next step by providing incentive for capital investment.

The Foodservice Industry is a very energy intensive activity. During the last two years the National Restaurant Association has pioneered major national programs in energy conservation for the foodservice industry.

The first phase was the development of a two day educational seminar on energy conservation designed to train the restaurateur in the practice and procedures for saving energy in a restaurant. A train the trainer program prepared instructor teams in 33 states and started energy conservation programs throughout the hospitality industry.

The second phase of the program was our Consumer Awareness Program on Energy Management (CAP-EM). In this program the foodservice industry used its daily contact with the public (over 500 million contacts per week) to pass on the energy conservation message to the consumer through placemats, brochures for the homeowner, coasters, and other items of interest.

The third phase of the program was our Restaurant Operators Program on Energy Conservation (ROPEC) which developed a low-cost/no-cost program which through good maintenance, good housekeeping and employee awareness could save a restaurant operator between 10% and 15% of his utility costs.

The next, or fourth phase of our energy conservation program involves retrofit of high energy consuming equipment and correction of high energy loss conditions in restaurants. The major thrust of this phase of our program is the energy tax credit program, specifically, S. 1288. Our problem in getting the individual small business restaurant to invest in energy efficient equipment is directly related to his economic situation and availability of cash to modernize his operation. The Commercial Business Energy Tax Credit Act of 1981, S. 1288, will give the individual small business the financial incentive to make the next step in energy conservation - that is, to retrofit his equipment and operation to modern energy efficiency standards, thereby saving half of the energy that he is now wasting.

The fifth phase of our energy conservation program is the National Restaurant Association's Project on Restaurant Energy Performance (PREP), a national program jointly funded by the foodservice industry and the U.S. Department of Energy which is metering the energy use profiles in nine restaurants for two years. The objective of the PREP project is to accurately define the basic energy usage parameters for integration into construction and design characteristics to become a part of the most energy efficient restaurants in the future. This program will also set the baseline for follow-on energy conservation programs and energy-efficient equipment.

At this time,the key to energy conservation in the foodservice industry is the availability of energy tax credits for modernization and retrofit of existing facilities. These energy tax credits are needed now and through 1986 in order to establish a conservation base in our industry which will continue into the future and eliminate today's unnecessary waste.

III. Specific Conservation Efforts by a Small Entrepreneur

I have been asked to give you a description of what one restaurateur has done in taking the initial less-costly steps to make my building and kitchen more energy-efficient. Of course, as a trained engineer, I can take the initial steps more easily and faster than others, but in order to continue my energy efficiency quest, major capital investments will be required. And for the smaller entrepreneur, a bill like S. 1288 is essential to spur that investment.

I represent the third generation of a 52-year-old family operated restaurant located in Mequon, Wisconsin, a suburb of Milwaukee. By all definitions, this is a small business operation, grossing approximately $1.3 million annually with 70 to 80 employees.

We became involved in energy conservation because restaurants are heavy users of energy, the second highest user after hospitals in the commercial sector. We use as much electricity in our restaurant as the 70-home subdivision next door. Approximately five years ago when our electric bill hit $3,000 in one month, we began to conserve in earnest. My being an electrical engineer has helped that effort as well.

We offer a unique situation for energy conservation because we operate a restaurant with parts of our building dating back to 1840. This structure has continually been remodeled over the years.

We began our conservation efforts with an infrared scan by the Wisconsin Gas Company as part of a local restaurant association energy seminar. In that scan we identified serious insulation gaps in our building and equipment, which we subsequently insulated, caulked and regasketed. From there we went on to more sophisticated efforts. We began to preheat our hot water using our refrigeration compressors. We installed time controls for our dishwasher. We became involved in balancing the air flows in the kitchen and the dining rooms. I designed economizers for our air conditioners and designed a make-up air system for our kitchen hoods. We also extensively relamped the entire restaurant and installed energy saving dimmers and other minor items such as this.

The total cost of these modifications approximated $6,000 over a three to four year period. We achieved savings of double that; in fact we have lowered our energy use per customer approximately 30 percent over the last four to five years. The only major expense at any one time has been a load-shedding device, in other words a black box that costs approximately $7,000 and has paid for itself in eight and a half months. My electrical engineering experience has allowed us to achieve greater savings per dollar invested than most other small operators. For example, our economizers for the two dining rooms were quoted at approximately $7,000 each by a heating, ventilating and air conditioning specialist. I designed and had them installed with manual controls for only $2,200 total.

Future significant energy savings at our operation can now only be achieved with greater costs in equipment and long payback periods. We remodeled our kitchen in late 1975 at a cost of approximately $179,000. This was before the real cost crunch in energy. Now we have a six year old, top-of-the-line dishwasher which operates perfectly and yet should be replaced with a more energy efficient model. Unfortunately, it would cost $10,000, not including installation, and that is just too much for a small businessman like me. I can't afford to throw away a perfectly good piece of equipment.

Another example is a $24,000 six-year-old stainless steel hood we have that should be replaced with a new energy efficient hood which cleans the grease-laden air and reintroduces fresh hot air back into the building for heating. But this means a $30-50,000 investment. I can go on with ovens, roll warmers, fryers, and other pieces of equipment. However, without energy tax credits, tese are all unaffordable for us.

It is important to note that because of my background, we have already achieved greater savings than 90 to 95 percent of our fellow small independent operators. (Typical energy costs for our restaurant run from 2.2 percent to 2.6 percent of our total gross sales.) What is to happen to all these other small businesses who cannot achieve such energy savings in this period of ever increasing energy costs and shrinking profits? S. 1288 holds part of the answer and should be enacted to help bring down total U.S. energy usage.

IV. Need for Commercial Business Energy Tax Credit Act

The purpose of the proposed "The Commercial Business Energy Tax Credit Act of 1981" (S.1288) is to encourage commercial businesses to conserve energy in existing facilities. Congress recognized the need to invest in energy saving equipment and materials when it enacted the Energy Tax Act of 1978 (P.L. -95-618). This law encouraged the residential and industrial sectors to invest in such items, but generally little was provided by way of tax incentives for the commercial sector. S. 1288 seeks to fill that void over a six year period.

Current law: In the 1978 law a new 10 percent tax credit for listed new energy property was provided to industrial or commercial businesses. But commercial businesses were not able to take advantage of this because the properties specifically listed in the statute are used primarily by the industrial sector:

Types of Property that are included as energy property in current law:

(i) Alternative energy property including biomass property
(ii) Solar and wind energy property
(iii) Specially defined energy property
(see items listed below)
(iv) Recycling equipment
(v) Shale oil equipment, or
(vi) Equipment for producing natural gas from
geopressured brine;

and

Cogeneration equipment
Qualified intercity buses
Qualified hydroelectric generating equipment
Ocean thermal equipment
Geothermal equipment

Specially defined energy property: The above list includes an item "specially defined energy property" that allows other equipment to be eligible for the 10 percent tax credit if the principal purpose is to reduce the amount of energy consumed in any existing industrial, agricultural, or commercial process, and that is installed in connection with an existing industrial, agricultural, or commercial facility.

The following property currently qualifies as specially defined energy property:

1. Recuperator;
2. Heat wheel;
3. Regenerator;
4. Heat exchanger;
5. Waste heat boiler;

6. Heat pipe;
7. Automatic energy control system;
8. Turbulator;
9. Preheater;
10. Combustible gas recovery system;
11. Economizer; or
12. Modifications to alumina electrolytic cells.

Note: As can be discerned most of the above items have industrial applications, although commercial businesses expected to claim Item 7 (energy management systems "EMS") but in 1981, IRS issued a rule stating that commercial processes, such as space heating, the main application for EMS, were not eligible. This meant that tax credits, other than for specific commercial processes, examples being cooking or laundry functions, were not covered.

Residential Tax Credits: The current law also allows a 15 percent tax credit (up to $2,000 in costs) for the purchase of qualified energy saving items by a homeowner. Among the items qualifying for the residential tax credit is insulation. Industrial and commercial businesses are not allowed to take tax credits for insulation under the 1978 act.

Expiration: The Energy Tax Act of 1978 expires for residences on December 31, 1985 and for industrial users on December 31, 1982.

Why Basic Elements of "The Commercial Business Energy Tax Credit Act of 1981" (S. 1288) are necessary for commercial energy conservation.

1) S. 1288 would provide a 20 percent energy tax credit for purchasing of equipment and insulation for an "existing industrial, retail, or commercial process, activity, facility, building or equipment." (See Item "X" of S. 1288) This language is key because it includes all existing commercial and retail processes and would correct the narrow interpretation of IRS of the meaning of "commercial process". In addition, the credit level of 20 percent is derived from a discounted cash flow calculation based on an equipment life of seven years. Without any tax credit, a company investing in equipment would find such an investment economical only when its annual energy savings approached 40 percent of the investment.

2) The tax credit would be available for energy property and insulation purchased after 1980 and before 1987 for existing structures. The commercial sector is seeking a six year period to convert to more energy efficient operations, since it has been overlooked by prior legislation, it lacks the capital resources of other sectors and because all parts of the American economy need to become energy efficient as part of a total energy program of the future.

3) The bill would extend existing (1978) tax credits (Items A through L, P.L. 95-618) for industrial businesses through 1986.

4) Equipment eligible for a tax credit would have to save some kind of energy, not just oil and natural gas. This bill is aimed at conserving all energy resources, since use of one affects the costs and availability of others, and because prices are rising for all energy sources.

5) To obtain a tax credit an owner would have to show that a principal purpose, rather than the principal purpose, of equipment purchased is to save energy. Obviously, equipment has many purposes, and tax credits should be offered for those that will reduce consumption of energy by a substantial amount. This change to "a principal purpose" is found in Item "X" of S. 1288.

6) Tax credits would be extended to commercial businesses by adding to the list of specially defined energy property items specifically used by the commercial business sector. (The credits would also be extended to industrial concerns if the same equipment is purchased.) In S. 1288 items "M" through "W" list the specially defined energy property proposed for tax credit eligibility by this legislation. The foodservice industry's comments will center around items M, O, U, W, and INSULATION PROPERTY. The other items listed in S. 1288 will be addressed by other members of the coalition that helped draft the bill.

The items listed in S. 1288, have been selected by engineers because of their potential for energy savings. The foodservice industry, which after hospitals, is the most energy intensive in the commercial sector, can be expected to save 20 percent or more energy if the tax credits are offered and the expected conversions and changes are made in restaurants. Seventy percent of the energy consumed in a restaurant is "process energy" and thirty percent is "comfort energy". In 1980 energy costs accounted for an average of 5-6 percent of a restaurant's gross annual sales up from 1 - 2 percent just ten years ago. The foodservice industry's conservation goals can be achieved more quickly if investments are made in the items described below.

V. Specific Sections of S. 1288 as they relate to the foodservice industry

1. FOODSERVICE EQUIPMENT

Section "W": "equipment used in the preparation, storage, cooking, display or serving of food or cleaning of dishware which incorporates design features specifically engineered to reduce energy consumption, and which replaces similar equipment of the taxpayer purchased before January 1, 1976."

This section "W" is the most important requirement for the foodservice industry. After a restaurant has done all the "no-cost/low-cost", management and maintenance control items available to conserve energy he must improve his operating equipment efficiency and move into an area of major expense--equipment modification, equipment retrofit and equipment replacement.

Referring once again to the Restaurants and Institutions 1981 Equipment Use Study:

> The greatest part of the dollars spent for foodservice equipment will be spent on remodeling and renovating. Their survey showed 44% of the respondents expect to replace existing equipment.

We note from the following table the specific major energy saving equipment purchases made during 1980 and in particular we note the fact that 75% of the approximate 3 billion dollars spent in 1980 was not for major energy saving equipment.

EQUIPMENT

FOODSERVICE EQUIPMENT PURCHASES SHOULD TOP $3 BILLION IN 1981

BUYING TRENDS

AN ENERGY FLASHBACK—WHAT WERE 1980 EQUIPMENT PURCHASES

The convection oven, dishwasher, and microwave were the three pieces of equipment to which operators turned most often to cut back on energy costs. This same trio heads the list of equipment operators would most like to add.

	Total	Fast food	Full service	Hotel/ motel	Retail	Recreation	Health care	School	Colleges universities	Employee feeding
Did purchase	24.4%	22.7%	27.6%	34 %	33.3%	*	19.4%	23.1%	26.5%	25.3%
Did not purchase	75.6	77.3	72.4	66	66.7	*	80.6	76.9	73.5	74.7
Major energy saving equipment purchases:										
Convection oven	14.3	5.3	9.1	13.3	*	*	11.5	27	21.7	16.7
Dishwasher	11.3	2.6	11.4	13.3	*	*	15.4	13.5	21.7	5.6
Microwave	7.9	5.3	9.1	6.7	*	*	19.2	2.[illegible]	4.3	11.1
Lighting	5.9	10.5	9.1	13.3	*	*	*	2.7	[illegible].3	*
Thermostats	4.9	7.9	4.5	6.7	*	*	*	5.4	*	11.1
Waterheater	4.4	2.6	6.8	13.3	*	*	*	5.4	*	*
Fryer/deep fryer	4.4	7.9	2.3	*	*	*	3.8	2.7	13	*
Steamer	4.4	*	2.3	*	*	*	3.8	8.1	8.7	5.6
Timers	4.4	5.3	6.8	6.7	*	*	3.8	*	*	11.1

Sample group was too small to yield statistically valid results

It is most interesting to see in the next chart the fact that energy availability and cost leads the list of areas of concern with greatest effect on future purchases.

EQUIPMENT

FOODSERVICE OPERATORS ARE REALLY PLUGGING IN FOR ENERGY CUTS

BUYING TRENDS

AREAS OF CONCERN WITH GREATEST EFFECT ON FUTURE PURCHASES

Foodservice operators gaze through a crystal ball to predict the areas of concern that will have the greatest effect on future purchases. Energy costs and availability reigns as the prime issue, with labor cost a strong second.

Area of concern for future	Total	Fast food	Full service	Hotel/ motel	Retail	Recreation	Health care	Schools	Colleges/ universities	Employee feeding
Energy availability cost	23.7%	23.4%	28.4%	25 %	•	25%	27.9%	17.7%	26.9%	14.1%
Labor cost/ availability	17.4	13.3	13.5	22.7	33.5%	25	18.9	21.3	11.8	26.8
Space limits	13.1	13.3	9.5	9.1	•	•	12.3	18.4	14	12.7
Financing	11.9	10.1	11.5	9.1	•	•	11.5	19.1	15.1	2.8
Increased output	8.6	12	9.5	4.5	•	•	4.9	4.3	11.8	12.7
Downtime/ maintenance	7.1	8.9	8.1	11.4	•	•	4.1	5	6.5	9.9
More automated equipment	5.7	5.7	2.7	6.8	33.3	25	5.7	9.2	1.3	4.2
Sanitation/ safety	5.3	2.5	4.1	4.5	•	•	11.5	4.3	3.2	9.9
Menu changes	4.4	5.7	9.5	4.5	•	•	1.6	0.7	5.4	2.8
Product liability	1.9	3.2	2.7	2.3	33.3	•	.8	•	1.1	2.8

In order for the foodservice industry to improve its energy efficient equipment investment practice of 25% in 1980 -- the credit incentives are necessary so that a realistic dollar payback can be realized.

The National Association of Food Equipment Manufacturers (NAFEM) presents the following documented cases of foodservice energy savings equipment that has been developed since 1976 and is available in today's market. These are typical examples of foodservice equipment that will become available for the 20% energy tax credit under S. 1288.

During the past five to six years, foodservice equipment manufacturers have developed and are continuing to develop new and modified foodservice equipment that will provide significant savings in energy and water for their customers, the foodservice industry. These savings were unheard of nine or ten years ago, mainly due to relatively low energy prices prior to the 1973-1974 energy crunch which drastically altered prices upward.

As a result of this energy crunch, foodservice equipment manufacturers have incorporated a number of significant energy efficiency improvements in their foodservice equipment.

Today, refrigerator manufacturers provide a feature, consisting of a hot refrigerant gas evaporator coil, that uses the waste heat from hot refrigerator compressor gas to evaporate refrigerant coil condensate. This development replaces an electric 200 watt evaporator heater which must operate 24 hours a day and uses 4.8 KWH per day or 1,752 KWH per year. For the average commercial kitchen which uses four single section refrigerators, use of a hot refrigerant gas evaporator coil provides an annual savings of 7,008 KWH per year.

Another significant energy efficiency development which manufacturers have introduced during the past five or six years is a natural gas heated, recirculated hot air, convection oven which can save up to 40% of the energy used by standard natural gas heated convection ovens. Potential energy savings are approximately 40,000 BTUs per hour. Annually, using the recycling oven four hours per day, 365 days per year, potential energy savings approach 58,400,000 BTUs or 58,400 cubic feet of natural gas.

The third area of real energy and water savings includes a development of two low-temperature chemical sanitizing dishwashers. One is a single tank door type dishwasher and the other is a two tank conveyorized model.

(a) The single tank door type dishwasher will save .72 gallons of water per rack of dishes when washed and rinsed. With the typical restaurant washing 200 racks of dishes per day for 365 days, the potential annual water savings is 52,800 gallons which translates into a savings of 113,834 cubic feet of natural gas or 16,672 KWH annually. This single tank door type dishwasher requires 50% less energy to heat dishwasher water.

(b) The two tank conveyorized dishwasher provides for annual savings in water and energy costs of $12,198. This savings is based upon actual field testing which compared the amount of water and energy needed to operate the hot water dishwasher which uses 2.32 gallons of 180 degree F. water per rack of dishes to the new two tank model which uses .6 gallons at 140 degrees F. per rack of dishes.

In addition to these product developments, the steam pressure cooker is another example of energy efficiency improvements in the commercial food equipment market. The steam pressure cooker is able to thaw and cook 10 pounds of frozen vegetables two and a half times faster with two times less energy and 24 to 60 times less water than a pressureless atmospheric convection type steam cooker. During the thawing and cooking process, the pressureless steam cooker utilizes 2.45 KWH and 7.44 gallons of water while the pressure cooker only utilizes 1.37 KWH and .393 gallons of water. This represents an energy savings of 1.08 KWH.

While improvements in energy efficiency have been made in other products, such as toasters and the cook-and-hold convection oven, the aforementioned product improvements provide a clear indication that there indeed have been significant strides made in energy efficiency of commercial food equipment since 1976.

2. ENERGY MANAGEMENT SYSTEMS (EMS)

Section "M" an energy management or control system or device, including but not limited to--

"(i) a mixed air, cooling coil discharge, and hot deck temperature reset device,
"(ii) any economizer or enthalpy controls,
"(iii) a thermostatic radiator valve,
"(iv) a computer or microprocessor control system which adjusts lighting, or which adjusts the supply of heating, cooling, and ventilation to meet illuminating or space conditioning requirements,
"(v) automatic equipment settings controls, load shedding devices and relay devices, including associated hardware,
"(vi) variable speed motor control packages combining a microcomputer with an alternating current inverter, and
"(vii) equipment required to operate or convert to variable energy supply systems,"

Every foodservice establishment has a requirement to use an energy management system to optimize the energy efficiency of the mechanical systems relating to heating, ventilating, air conditioning and/or lighting systems. More sophisticated EMS controls are being developed which can be used to control energy utilization to satisfy the dynamic complex energy requirements of the kitchen area of a restaurant.

January 21, 1981 IRS Rule Makes Energy Management Control Systems Ineligible for certain commercial applications: When the 1978 Energy Tax Act was enacted, commercial businesses, including foodservice operators, found one item among the A to L listing of specially defined energy property for which they believed a credit could be claimed. This was the Automatic Energy Control Systems (Section (F) (10)), also called Energy Management Systems (EMS). These systems are used in commercial buildings primarily to regulate environmental space conditioning, lighting and other systems that use more uniform energy loads.

For instance, in restaurants, although 70 percent of the energy is used in the kitchen for on-again/off-again processes, today EMS are applied to the 30 percent of energy that is used in non-process space conditioning.

But the IRS, January 23, 1981 ruled against tax credits for EMS applied to non-process commercial applications. This was done by giving a narrow interpretation of the term "commercial process". The IRS also ruled that tax credits could be claimed only for that part of a multi-use EMS that was used for the narrowly defined process energy functions. The National Restaurant Association and numerous commercial groups protested this IRS action. (See attached comments, submitted November 18, 1980, Appendix IV).

Several bills have been introduced in Congress that would rectify this IRS ruling, including S. 475 (Durenberger, R-MN) and H.R. 1378 (Frenzel, R-MN). S. 1288 also would clarify that tax credits could be claimed for EMS that were used throughout commercial and retail establishments to control total energy usage.

3. ENERGY REDISTRIBUTION SYSTEMS

> Section "O" "an energy redistribution system, device or component for heating or cooling, including a duct, pipe, vent, pump or fan which exchanges the air, gas or fluids within or between rooms to increase or decrease temperature or humidity."

There is a requirement for major investment in the foodservice industry for energy redistribution system modification. This involves vents to direct air to different zones of the facility and the redesign or remodeling or replacement of the kitchen air exhaust-ventilation systems to include the introduction of outside make-up air in place of inside air which has required energy to become heated, cooled, or dehumidified.

The National Association of Food Equipment Manufacturers (NAFEM) reports the following typical experience from one of their members: "In November 1978 an existing commercial kitchen ventilation system was replaced in a Rhode Island restaurant. In the remodeling process, the size of the system coverage was increased by approximately 10% - weather patterns in this location were consistent between 1978 and 1979. Sales were up or increasing during the same period. One year after the installation of the new system the restaurant owners reported that their gas and electric bills for 1978 and 1979 were down 15% in KWH electric consumption and 24% down in cubic feet of gas consumption. This is an example of the major energy savings potential of a single energy system replacement in a kitchen ventilating and exhaust system.

4. IMPROVING THE EFFICIENCY OF REFRIGERATION EQUIPMENT

> Section "U" "a device which modifies refrigeration equipment, including--
>
> "(i) a compressor or humidity control,
> "(ii) a device for automatically defrosting refrigerator or freezer equipment,
> "(iii) a demand waste heat or ambient air defrost system,
> "(iv) a heat reclaim coil,
> "(v) a temperature compensated evaporator pressure regulator, and
> "(vi) a refrigerator fixture cover or door,

There is a universal requirement for refrigeration and freezer capability in the foodservice area. The items outlined in section U can improve the efficiency of the mechanical equipment and reclaim the heat extracted from items that are refrigerated and frozen. This reclaimed heat can be used in many ways to reduce the energy requirements of the overall operation. Thus, there is a double savings, improving efficiency and reuse of heat energy for secondary requirements.

5. INSULATION

> Section "18" "INSULATION PROPERTY -- The term 'insulation property' means property which is specifically and primarily designed to reduce when installed in or on an existing industrial, retail or commercial building or facility the heat loss or gain of such building or facility, including, but not limited to --
>
> "(A) insulation materials installed as part of the building envelope including the wall, ceiling, floor, and roof,
> "(B) insulation materials installed in connection with mechanical system equipment, ducts and piping,
> "(C) heat reflecting and heat absorbing window and door materials and reflective and heat absorbing window and door films and coatings,
> "(D) storm or thermal windows or doors for the exterior of a building,
> "(E) thermal curtains which separate areas of different temperatures,
> "(F) vestibules,
> "(G) exterior skylights which have one or more sheets of glazing or other type of panel, and
> "(H) caulking or weatherstripping of an exterior door, window, or skylight."

A major percentage of the over 550,000 foodservice facilities now being utilized were built more than ten years ago. Prior to the '72-'73 oil embargo period, the United States' insulation standards were not based on the energy conservation practices being used in the industry today. Therefore, some of the most important items that needs attention today is proper and sufficient insulation in all of our foodservice facilities.

6. OTHER ENERGY PROPERTIES DEFINED IN S. 1288

Although other energy properties described for energy tax credits in S. 1288 will not have a major impact on energy savings in every foodservice facility, the foodservice industry will save a significant percentage of its wasted energy by across-the-board modifications, retrofits, and replacements where appropriate to meet the energy conservation requirements of the individual facility, equipment and process being employed in the operation. The additional energy properties are the following:

> Section "(N)" " a heat pump apparatus, cooling tower, condenser or evaporator which modifies or replaces existing components in heating, ventilating, air-conditioning or refrigeration systems,"

Section "(P)" " a furnace or boiler replacement burner designed to achieve a reduction in the amount of fuel consumed as a result of increased combustion efficiency,"

Section "(Q)" "a device or control package retrofitted to an electric motor to improve its efficiency,"

Section "(R)" "a mechanical or programmable timer or motion detector to turn on or off energy using equipment,"

Section "(S)" "a meter or submeter which displays or records the cost or quantity of energy usage,"

Section "(T)" "a replacement, modification or conversion of a lighting system," and

Section "(V)" " an energy storage system, including a heat sink."

VI. Usage of the tax credit by the foodservice industry

In order to estimate the foodservice industry tax credit usage over the six year life of S. 1288 we must first estimate the foodservice industry market for eligible energy property. To do this we can use the economic analysis developed for S. 1288 and refer to Table #1. This chart provides an estimate of the commercial and industrial 1981 market size for eligible energy property.

TABLE 1

1981 MARKET SIZE FOR ELIGIBLE EQUIPMENT WITHOUT ANY TAX CREDIT (millions)

S.1288 Subparagraphs	Commercial	Industrial	Total
A-L *	$ 0	$2,400	$2,400
M Energy Management Systems (EMS)	375	**	375
N Heat Pumps/Condensors/Evaporators	40	40	80
O Energy Redistribution Systems	20	20	40
P Furnace/Boiler Replacement Burner	40	105	145
Q Device Retrofitted to Electric Motor	20	60	80
R Timer/Motion Detector	40	60	100
S Meter/Submeter	20	60	80
T Lighting Systems	375	400	775
U Refrigeration Modifications	125	125	250
V Energy Storage Systems	40	105	145
W Foodservice Equipment	395	0	395
Insulation Property	335	800	1,170
TOTAL	$1,825	$4,175	$6,000

* Items A-L are currently eligible for a 10% credit under P.L. 95-618. The estimated market for these items without this credit is $2.4 billion.

** Industrial sector is eligible for this equipment under letter G of P.L. 95-618.

As noted in Section II of this statement relating to foodservice energy usage, it is stated that the foodservice industry uses approximately 2% of the nation's total energy. The Department of Energy estimates that the commercial sector used 16% of the U.S. energy in 1979, thus the foodservice industry uses approximately one-eighth of the energy used in the total commercial sector. We also have shown in section II that a dollar analysis and an energy analysis are essentially equivalent. Therefore, we can take one-eighth of the market estimates in the commercial sector as a good approximation of the foodservice industry market for general energy property. This will work in all cases except in item "W" (Foodservice Equipment) which is specifically related to the foodservice industry.

Applying these factors to table #1, we can show that the foodservice industry is estimated to contribute approximately $600 million dollars in 1981 to the commercial market for energy property as defined in S. 1288. Using a 30% market increase due to the tax credit and a 7 year lifetime for the analysis, we can show the following annual responses as related to the foodservice industry:

a.	Incremental Increase in Market	$180 million
b.	Total Annual Level of Market	$780 million
c.	7 year Lifetime Tax Credit (20% of b)	$156 million
d.	7 year Tax return to Treasury	$ 90 million
e.	Lifetime cost to Treasury (c-d)	$ 66 million

In Section II, part B, we estimated that S. 1288 has the potential, because of the foodservice industry's energy conservation capability to:

1. Reduce the United States annual requirement for energy by approximately 40 to 50 million barrels of oil equivalent per year, and

2. S. 1288 has the potential of saving the foodservice industry an annual energy cost equivalent to approximately one-percent of their annual sales or one and one-half billion dollars in energy costs per year at today's prices.

The energy property listed in S. 1288 will not contribute to unemployment as no labor saving devices are involved. However, there will be a significant increase in employment for additional equipment and materials to be manufactured and labor for installation.

VII. Summary

- Energy availability and cost will continue to be a concern of all nations. The United States has been the most energy consumptive country in the world per unit of output. The "Commercial Business Energy Tax Credit Act of 1981" will help propel a sector of the economy that has been overlooked by prior tax legislation to more rapid energy efficiency. If 20 percent of the energy consumed by the commercial sector could be saved, it would save .8 percent of the total energy used in the U.S. based on 1979 figures.

- If tax credits have been made available to the industrial sector, which has more ready access to capital markets than smaller enterprises, and to the residential sector which does not provide jobs or tax payments, it seems that the same incentives should be made available to the commercial sector for equity reasons.

- The U.S. Government in the past has used the tax system to achieve certain priorities. The need for energy conservation and a reduction of energy usage per unit of output is an essential goal if we want to remain competitive in an increasingly competitive world. S. 1288 would allow commercial businesses credits for a six year period.

- An economic analysis of the cost impact of Senator Durenberger's bill has been developed by his staff and technical experts representing the coalition backing the legislation. The analysis has been discussed with the Joint Committee on Taxation.

The analysis provides the following estimates of the costs of S. 1288 on an annual basis:

On an annual basis, it is estimated that S. 1288 will:

1. Spur an annual investment in energy conserving equipment of 30%, increasing the growth of the market from $6 billion to $7.8 billion.
2. Save approximately 715 million barrels of oil equivalent over the life of the bill.
3. Provide an annual credit to business of $1.6 billion.
4. *Return to government $895 million each year.

*(In the economic analysis of S. 1288, only the most elementary dollar values have been calculated. Specifically, the figure given on return of dollars to the government is low. The $895 million figure is based on an increase of taxes paid to the government because of reduction of tax credits claimed by by businesses when energy usage declines. However, no effort was made to calculate the by-product tax benefits from increased investment made by business, the added stimulus to the economy, nor the added employment resulting from the manufacture, distribution, and installation of such energy property.)

5. Subtracting the basic figures results in an annual total net revenue cost of $665 million, but if the by-product tax revenue increases were considered, the total probably would be closer to zero.

The 20 percent energy credit is sought to make investment feasible. It is recognized that there would have been investment in energy saving property without the provision of an energy tax credit. Such a credit, when added to the available 10 percent investment credit, will propel commercial businesses to energy efficiency more rapidly. An argument made against the investment tax credit, when it was under initial consideration in 1962, was that a certain amount of investment would occur without an incentive. However, the purpose was to encourage and accelerate an overall total increase in investment. Experience with the investment tax credit has been that after periods of eliminating the credit and then restoring it, there has been a definite increase in investment by business in equipment and machinery. Increasing the credit rate has produced a similar increase in total investment.

Although we have focused primarily on foodservice industry issues, I would like to conclude by quoting from a recent Congressional Research Service Study "U.S. Energy Outlook, A Demand Perspective for the Eighties" "Commercial Consumption", which states that:

> "the commercial sector's rapid growth in energy consumption suggests that this sector should receive more policy interest that might be generated by the relative share of energy use presently going to the commercial sector."*

The report continues that "given the dynamic over expanding nature of the commercial sector this situation is unfortunate." About 13 percent of the primary energy consumption of the U.S. is consumed by the commercial sector. Much of this is inefficiently used with some suggesting that up to 50% could be saved!

I have tried to develop the rationale for the commercial sector's effort to seek energy tax credits. I believe that the energy conservation potential is clear, and in this statement we have tried to show what the foodservice industry's needs are, and how S. 1288 would help in the effort to conserve energy. I urge you to think of the smaller, entreprenurial business when you make your recommendations on this tax credit legislation.

I would be happy to answer questions when the rest of the witnesses complete their presentations.

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*Oak Ridge National Laboratory. The Commercial Demand for Energy: A Disaggregated Approach. ORNL/CON 15. April 1978.

APPENDIX I

Table 1--Consumption of Energy by the Commercial Sector
United States (Trillion btu)

Year	Coal	Gas	Petroleum	Electric	Electric Losses	Total	Total minus Losses
1960	0.63	1.06	2.61	0.54	1.36	6.19	4.83
1961	0.57	1.11	2.63	0.57	1.40	6.29	4.89
1962	0.57	1.25	2.71	0.62	1.50	6.64	5.14
1963	0.48	1.31	2.71	0.69	1.65	6.84	5.19
1964	0.41	1.42	2.72	0.74	1.76	7.05	5.29
1965	0.39	1.49	3.03	0.79	1.89	7.60	5.71
1966	0.40	1.68	3.07	0.86	2.07	8.07	6.00
1967	0.34	2.02	3.17	0.93	2.22	8.67	6.45
1968	0.31	2.14	3.24	1.02	2.43	9.14	6.71
1969	0.29	2.32	3.32	1.11	2.66	9.71	7.05
1970	0.25	2.47	3.47	1.20	2.92	10.31	7.39
1971	0.24	2.59	3.48	1.29	3.14	10.73	7.59
1972	0.18	2.68	3.64	1.41	3.40	11.31	7.91
1973	0.17	2.65	3.77	1.52	3.68	11.79	8.11
1974	0.17	2.62	3.46	1.50	3.70	11.45	7.75
1975	0.14	2.56	3.17	1.59	3.92	11.38	7.46
1976	0.14	2.72	3.44	1.67	4.08	12.05	7.97
1977	0.14	2.55	3.46	1.75	4.32	12.22	7.90
1978	0.16	2.64	3.55	1.80	4.41	12.56	8.15

Source: DOE State Energy Data Report, April 1980

APPENDIX II

SIC CODE	TITLE
	AGRICULTURE SERVICES, FORESTRY, AND FISHING (Except Agricultrual Crops/Livestock)
07	Agricultural Services
08	Forestry
09	Fishing, Hunting, and Trapping
	MINING
10	Mining
11-12	Coal Mining
13	Oil and Gas Extraction
14	Nonmetallic Minerals, except Fuels
	CONSTRUCTION
15*	General Building Contractors
16	Heavy Construciton Contractors
17	Special Trade Contractors
	MANUFACTURING
20	Food and Kindred Products
21	Tobacco Manufactures
22	Textile Mill Products
23	Apparel and Other Textile Products
24	Lumber and Wood Products
25	Furniture and Fixtures
26	Paper and Allied Products
27	Printing and Publishing
28	Chemicals and Allied Products
29	Petroleum and Coal Products
30	Rubber and Miscellaneous Plastics Products
31	Leather and Leather Products
32	Stone, Clay and Glass Products
33	Primary Metal Industries
34	Fabricated Metal Products
35	Machinery, except Electrical
36	Electrical and Electronic Equipment
37	Transportation Equipment
38	Instruments and Related Products
39	Miscellaneous Manufacturing Industries
	TRANSPORTATION AND PUBLIC UTILITIES, EXCEPT RAILROADS
41	Local and Interurban Passenger Transit
42	Trucking and Warehousing
43	U.S. Postal Service
44	Water Transportation
45	Transportation by Air
	TRANSPORTATION AND PUBLIC UTILITIES, EXCEPT RAILROADS – Continued
46	Pipe Lines, except Natural Gas
47	Transportation Services
48	Communication
49	Electric, Gas, and Sanitary Services
**	**WHOLESALE TRADE**
50	Wholesale Trade – Durable Goods
51	Wholesale Trade – Nondurable Goods
52	Building Materials and Garden Supplies
53	General Merchandise Stores
54	Food Stores
55	Automotive Dealers and Service Stations
56	Apparel and Accessory Stores
57	Furniture and Home Furnishings Stores
58	Eating and Drinking Places
59	Miscellaneous Retail
	FINANCE, INSURANCE, AND REAL ESTATE
60	Banking
61	Credit Agencies Other Than Banks
62	Security, Commodity Brokers and Services
63	Insurance Carriers
64	Insurance Agents, Brokers, and Service
65*	Real Estate
66	Combined Real Estate, Insurance, etc
67	Holding and Other Investment Companies
	SERVICES
70	Hotels and Other Lodging Places
72	Personal Services
73	Business Services
75	Auto Repair, Services, and Garages
76	Miscellaneous Repair Services
78	Motion Pictures
79	Amusement and Recreation Services
80	Health Services
81	Legal Services
82	Educational Services
83	Social Services
86	Membership Organizations
89	Miscellaneous Services
99	Nonclassifiable Enterprises

*SIC Code 6552 Included with Major Group 15

** COMMERCIAL SECTOR BUSINESSES IN THE 50 - 99 SIC range that would be covered by S. 1288 "The Commercial Business Energy Tax Credit Act of 1981"

APPENDIX III

Total Cost Valuation of Buildings in U.S.,
1977 (Current $)

	Billions	Percent
Industrial	$ 230.1	6.5
Commercial	376.1	10.7
Religious	61.2	1.7
Educational	47.4	1.3
Hospital	79.3	2.3
Farm	50.5	1.4
Residential	2,591.6	73.7
Other*	80.2	2.3
	$3,516.4	100.0%

* Other includes terminals, movie theaters, etc.

Note: Buildings owned by public utilities are excluded.

Source: BEA, U.S. Department of Commerce.

Commercial buildings represent nearly 11 percent of the total cost valuation of all buildings in 1977, accounting for a far greater proportion than the 6.5 percent contributed by industrial buildings.

APPENDIX IV

COMMENTS
OF THE
NATIONAL RESTAURANT ASSOCIATION
ON
PROPOSED RULE
regarding
"Investment Credit for Energy Property" as provided under
THE ENERGY TAX ACT OF 1978

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311 First Street, N.W.
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November 18, 1980
Sheila Bamberger
Legislative Representative

November 18, 1980

COMMENTS OF THE NATIONAL RESTAURANT ASSOCIATION
ON
PROPOSED IRS RULE OF SEPTEMBER 19, 1980
regarding
"INVESTMENT CREDIT FOR ENERGY PROPERTY"

Introduction

The National Restaurant Association (NRA) is a business league of approximately 10,000 corporate members plus an estimated 100,000 individual entrepreneurs and partnerships operating all types of foodservice establishments in 50 states. Our industry employs about eight million persons with total sales for 1980 estimated to be $112 billion. The industry is composed principally of small unit firms. Ninety-seven percent of individual eating places had sales of less than one million dollars in 1977.

The foodservice industry is a component of the commercial sector of the economy. This sector is estimated to use 15 to 16 percent of the nation's energy, while the industrial sector uses 35 to 36 percent, residences 20 to 21 percent, transportation 28 percent. Within the commercial group hospitals are estimated to be the most energy consumptive, followed by restaurant operations. Rough calculations indicate restaurants consume from one, but not more than two percent, of total annual U.S. energy usage. Of the energy used in foodservice operations it is estimated that 30 percent goes to environmental space conditioning, the other 70 percent to processing, storing or holding of food. Because of this high energy usage, restaurants have an on-going program of conservation. In addition NRA is participating with DOE in studies of restaurant energy usage and is involved in the legislative and rule making process on energy matters. Thus the industry has a deep concern with the rule proposed by the IRS in 45 Federal Register, 62496, September 19, 1980.

Summary of Positions

Request for Hearings and Opportunity to Testify

Pursuant to Federal Register notices the National Restaurant Association requests that hearings be held on the proposed rules and requests an opportunity to testify on December 4, 1980, Washington, D.C.

Background

Under The Energy Tax Act of 1978 (P.L. 95-618) energy tax credits for conservation were extended specifically to residences for certain items and materials and to large industrial users through lists of "alternative" energy property or "specially defined energy property." Commercial, or smaller businesses, were not excluded from using the industrial tax credits, but, for the most part, the commercial sector of the economy does not use the listed items, and therefore cannot claim the allowed tax credits. (An analysis of IRS statistics on tax credits claimed by business, both industrial and commercial, in 1979 and six months of 1980 bears this out. Out of $174 million claimed, $165 million went to industrial users and only $9 million to commercial enterprises. (See Energy Users News, August 18, 1980)).

However, according to restaurant operators, among the specially defined energy items there is one that has gained wider application in foodservice operations and tax credits are expected to be granted. These are the Automatic Energy Control Systems (AECS) (Section (f)(10)) that can regulate environmental space conditioning equipment, lighting and other processing equipment in restaurant operations.

Recommended Changes to Proposed Rule

Therefore, the National Restaurant Association, while pleased that the IRS is moving forward to promulgate rules relating to the Energy Tax Act of 1978, has several concerns about the proposed regulations:

1. The proposed interpretation of "industrial or commercial process" seems to us narrow and arbitrary and not an appropriate reflection of the language of the law, legislative history or intent of Congress, especially as it would be applied to AECS.

2. The "incremental cost" concept, that would deny credits to the nonqualifying portion of certain investments, particularly AECS, in our opinion, works against purchase of energy saving devices at a time when the country is trying to switch to more energy efficient systems.

And, finally, NRA is concerned with

3. The failure of the Secretary to add other specially defined property for tax credits as allowed under discretionary authority provided by P.L. 95-618.

1. Definition of "Industrial or Commercial Process"

The proposed rule provides a definition of industrial or commercial process (45 Federal Register 9/19/80, 62504) under paragraphs (f)(3)(i),(ii),(iii),(iv), that must be met if specially defined energy property listed in the same proposed rule in paragraphs (f)(4) through (14), 62504-62505, are to receive tax credits.

The restaurant industry recognizes that paragraph (f)(3)(iii) specifically allows tax credits for automatic energy control systems (AECS) used in restaurants where food processing occurs, both for the processing itself and the "lighting, heating, cooling or ventilating, etc." occurring in such an area paragraph (f)(10).

However, the majority of automatic control systems that are being installed in restaurants, with the expectation that tax credits will be granted, are aimed at controlling overall usage of energy in a restaurant, including the 30 percent that is used for environmental space conditioning in the service area of a restaurant. Many of the AECS in use are single, but comprehensive, units that control many aspects of a restaurant's energy consumption. They are aimed at cutting overall energy consumption, not just consumption of energy in or for the process area of restaurant operations.

Under the IRS proposed rule a special emphasis is given to the word process which is defined as "a means or method of producing a desired result by chemical, physical or mechanical action" (Section (f)(3)(i)). The proposal further states that "For example, equipment installed in connection with retail sales, general office use and residential use are (sic.) not used in a process within the meaning of this paragraph (f)(3)." If one relies on this language alone as the determinent of which AECS functions are to be eligible for tax credits, then the retail sector and other commercial sector businesses, which for the most part do not have chemical, physical or manufacturing processes, would be excluded. This means that commercial sector operations such as those carried out by hospitals, foodservice kitchens, and laundry establishments would be among the few qualified under the proposed definition. (Unfortunately, the energy used in foodservice kitchen processing operations probably is not yet as susceptible to management by automatic energy control systems. At the same time, the service side of a restaurant operation, which can be controlled by AECS, would be excluded under proposed definitions.)

Statistics show that a tremendous amount of energy is consumed in environmental space conditioning. A study released by the World Watch Institute in November 1980 estimates that one-fourth of the world's energy consumption will go to the heating, cooling and ventilating of buildings by the year 2000.

We note that the word"process"has many meanings, not the limited ones offered in the proposed rule, especially for commercial sector businesses which are primarily service type operations. Further, the Conference Report language on P.L. 95-618 refers to installation in an existing facility, and because the commercial sector of the economy is not involved in chemical, physical or mechanical processes as described in the proposed rule, we think the course for the U.S. government is to provide a more inclusive interpretation of commercial processing rather than a limited one, especially since the commercial sector uses between 15 and 16 percent of the total annual U.S. energy consumption.

Wording in the Senate Report on the Energy Tax Act of 1978 reinforces this direction by suggesting that Congress did not intend the credit to be limited to manufacturing operations in commercial establishments. It defines automatic energy control systems as equipment "used to control energy usage for environmental space conditioning or for manufacturing processes in ways which automatically minimize such energy usage..." Such a definition implies that AECS are effective energy saver tools for AECS environmental space conditioning wherever it occurs not just where a commercial manufacturing process (whatever that may be) takes place. Only a contorted logic would call for a narrow definition of"process"when the real goal for the United States is decreased energy usage. The Senate Report language suggests the reasonable approach that credits be applicable to AECS in both manufacturing and nonmanufacturing commercial operations.

In the case of restaurants, AECS are first applied to environmental space conditioning, usually a single unit for both the kitchen and service areas of a restaurant. In addition some AECS are designed to monitor/control other energy use in a restaurant. To divide the cost of the automatic control system among its uses for a tax credit is difficult to do and an inefficient way to run a tax credit program.

2. Incremental Cost Rule

The proposed rule would disallow a credit for that portion of specially defined energy property, such as an automatic control system, which performs an excluded function or a function other than conservation. This proposed application is particularly troublesome if the narrow definition of commercial processing remains intact. "Incremental cost," is defined by IRS in the proposed rule as "that excess of the total cost of equipment over the amount that would be expended for the equipment if the equipment were not used for the qualifying purpose." (Section (k)). This incremental cost rule would be of less concern to the restaurant industry if the "commercial processing" definition were broader, however the concept is unwieldy in principle and should not be retained. In the first place "specially defined energy property" cannot qualify for a credit unless the principal purpose of such property is reduction of energy consumption or heat waste. (Section (f)(2)) In addition, under the proposed approach Treasury would have those claiming a tax credit calculate what the cost of a separate unit for non-qualifying functions would be, then subtract that amount from the cost of the comprehensive unit. However, a separate unit might be more expensive than the portion of a comprehensive unit that covered a non-qualifying function. Thus, the allowable tax credit would be reduced even further. We fail to understand why IRS proposes such complex definitions and rule applications when the purpose should be to offer incentives to U.S. business to convert to energy efficient operations by 1984 or earlier. We suggest that the Section (k) be revised to provide for a full tax credit if less than 10 percent of a piece of equipment is used for a nonqualifying function, and to allow a percentage reduction in tax credits based on the cost of the comprehensive (not separate) unit, if a comprehensive unit covers from 11 to 49 percent of nonqualifying functions.

3. Failure to Add to Specially Defined Energy Property List Under Secretary's Discretionary Authority

The proposed rule for "Investment Credit for Energy Property" specifically states that the Secretary had not added to the list of "specially defined energy property" because of changes made by the windfall profits tax law (45 Federal Register 62499). The document does not explain why this is so. However, because authority for energy tax credits under the 1978 law will expire it seems to the foodservice industry that the Secretary should move forward to make additional items eligible for tax credits, particularly since the windfall profits tax bill (P.L. 96-223) tightens the criteria that must be met to make equipment eligible for such credits. The NRA is seeking additions of equipment to this list including:

"(M) a flash steam recovery system,

"(N) a recovered heat storage system,

"(O) any duct, pipe or vent, the principal purpose of which is to exchange the air between rooms to increase or decrease temperature,

"(P) a furnace replacement burner designed to achieve a reduction in the amount of fuel consumed as a result of increased combustion efficiency,

"(Q) a high efficiency electric motor,

"(R) a high efficiency steam boiler,

"(S) low pressure sodium lights,

"(T) heat recovery equipment installed on oven and boiler stacks,

"(U) a timer to turn on and/or off energy using equipment,

"(V) a device for automatically defrosting refrigerator or freezer equipment,

"(W) a heat reclaim for hot water heating,

"(X) a device for modifying flue openings designed to increase the efficiency of operation of the heating system,

"(Y) an electrical or mechanical furnace ignition system which replaces a gas pilot light,

"(Z) a meter which displays the cost of energy usage, "(AA) an automatic energy control system, such as mixed air temperature reset devices, cooling coil discharge temperature reset devices, hot deck temperature reset devices, economizer controls, enthalpy controls, night setback thermostats, time clocks to start and/or stop selected heating, ventilating, and air-conditioning systems, refrigeration equipment, hot water generators, and associated pumps and fans, thermostatic radiator valves, and central computer control systems, which adjust the supply of heating, cooling, and ventilation to meet space conditioning requirements,

"(BB) a capacitor for power factor adjustment,

"(CC) a roof sprayer,

"(DD) a direct fired food baking oven that replaces an indirect fired baking oven or an oven that is more than 12 years old,"

"(EE) equipment used directly in the preparation, storage, cooking, display, processing or serving of food which consumes energy, such as dishwashers, ovens, broilers, fryers, refrigerators, freezers, and which replaces similar equipment more than 12 years old,

"(FF) any other property specified by an energy auditor, who is trained and certified pursuant to grants made and minimum standards established in accordance with section 563 of Public Law 96-294.

Conclusion

The National Restaurant Association urges the IRS to make the recommended changes to the proposed rule in order to assure that the country approach maximum energy conservation during the 1980's. Our industry supports the concept that all aspects of substantial commercial energy conservation operations be eligible for energy tax credits, that the incremental cost concept be modified to provide a more straightforward application and that the list of "specially defined energy property" be expanded through use of the Secretary's discretionary authority.

Senator **WALLOP**. Mr. Freedman.

STATEMENT OF DAVID FREEDMAN, DIRECTOR OF SERVICES, GIANT FOOD, INC., REPRESENTING FOOD MARKETING INSTITUTE, WASHINGTON, D.C.

Mr. **FREEDMAN**. Thank you, Senator. I am David Freedman of Giant Food, based here in Landover, Md. We are a regional food chain that serves the metropolitan Washington and Baltimore markets. Today I am representing the Food Marketing Institute as chairman of its energy committee.

The supermarket industry wants to help itself and it wants to help America become energy independent. Senator Durenberger's bill, S. 1288, is a constructive measure which will encourage energy conservation in our food stores by accelerating our industry's investment in energy saving equipment. It will accelerate this investment by helping us clear our company's ROI griddles, and it is these economic guidelines that we need to keep our stores in good financial health.

We are in a very competitive consumer-oriented business. Utilities are now our second-highest controllable expense, an expense for most of us that exceeds net profit after taxes. There is intense competition within our companies for the allocation of our limited financial resources. Money that can be used to buy equipment to reduce energy consumption can also be used to buy equipment to increase sales. Bill 1288 will improve the attractiveness of conservation investments and help furnish private capital needed to pursue them.

Senator, we are proud of the clever and ingenious ways that our newest supermarkets are using to save energy. Our new stores are heated by waste heat reclaimed from the refrigeration system, and these stores are air-conditioned by the cold air that escapes and is captured from the refrigerated sales cases. Our energy committee was fortunate enough last month to visit a store in Denver, Colo., where the entire store was heated and air-conditioned without any backup air-conditioning or heating equipment. It was all done with reclaimed heat and cold. As a matter of fact, waste heat from the ice cream compressors can heat the water to wash down and sanitize the work areas.

We have increased the thickness of roof insulation, reduced the size of the front windows, and added vestibules and enclosed loading docks to keep out cold and hot air. A new store typically uses one-third less energy than one that was designed just 5 years ago. However, we have a problem. The problem is that there are hundreds of thousands of existing stores out there which were designed when energy conservation was not a consideration and where the economics are still not favorable to invest in energy saving equipment. In these stores it is more cost beneficial to waste energy than to install the expensive piping, valves, and controls necessary to reclaim waste heat and cold air.

In these older stores we have, however, done the cheap and easy things. We have relamped with reduced-wattage bulbs and have told our employees to turn off the lights, close refrigerator doors, and not to readjust the thermostats from their energy efficient settings. To save more energy, however, we must engineer or re-engineer our stores and spend money. Lots of money.

Bill 1288 will help tip the scales to make these conversions cost effective. The supermarket industry wants to do its part to help the country reach its priority goal of energy independence. To do so, we need the tax incentive like our good customers enjoy in their homes and our suppliers get in their factories and processing plants. It is irrational for the Internal Revenue Service to discriminate against the commercial sector. A Btu saved is a Btu saved. A barrel of OPEC oil used in a corner grocery store in Richfield, N.J., is no different than a barrel of OPEC oil used by General Motors in Pontiac, Mich.

Bill 1288 should not be looked at as a cost to the Treasury, but as a way to save millions of barrels of oil for our businesses, and, more importantly, for our country.

Thank you very much.

Senator Wallop. Thank you very much, Mr. Freedman.

[The prepared statement follows:]

TESTIMONY
OF
DAVID N. FREEDMAN
GIANT FOOD, INC.
ON BEHALF OF
FOOD MARKETING INSTITUTE*
BEFORE THE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION,
COMMITTEE ON FINANCE
UNITED STATES SENATE
ON
S. 1288, THE "COMMERCIAL BUSINESS ENERGY TAX ACT"
OCTOBER 19, 1981

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* 1750 K St. NW
Washington, DC 20006

Good morning, I'm David Freedman, Director of Services for Giant Food based in Landover, Maryland. Today I am representing the Food Marketing Institute as Chairman of its Energy Conservation Committee. FMI is a national nonprofit trade association representing 1100 grocery companies. One half of FMI's membership operates one store. Eighty percent operate ten stores or less, and all the major chains are also members of FMI.

FMI and its 1100 food retailer and wholesaler members are very appreciative of the efforts of this subcommittee in considering this legislation, and we especially would like to thank Senator Durenberger for recognizing the needs of the commerical sector for energy savings. S. 1288 will not only redirect a misguided IRS, but will provide the incentive for food stores and other commercial buildings to make needed purchases of energy conservation equipment.

As a result of the 1978 Energy Tax Act, only a few items applicable to commercial buildings were eligible for tax credits. The Internal Revenue Service issued a ruling which not only changed what was already on our accounting ledgers, but will keep us from making future conservation purchases. IRS concluded that the 1978 Act stipulated that eligible energy conserving equipment be installed in connection with an industrial or commercial "process." IRS then ruled that commercial "activities" are not commercial "processes."

According to the IRS rule, a food store would have to be manufacturing or processing food in the store to qualify for the credit.

The effect of the strict IRS interpretation has been to virtually eliminate the entire commercial sector from any energy tax credits. A BTU saved is a BTU saved, and it is just as important to conserve this energy in the commercial sector as it is in the industrial and residential sectors. S. 1288 provides this equal treatment for the commercial sector by allowing tax credits for commercial and retail activities, such as the lighting systems in the food stores.

In addition, S. 1288 provides two other critical conservation incentives. First, the bill itemizes a generic list of eligible equipment. The equipment cited directly impacts the major energy using equipment in commercial buildings. Food stores will be able to make significant conservation improvements in our major energy uses for refrigeration, lighting, and heating and cooling. Insulation as well, is equally as important for a food store and other commercial buildings as it is for someone's home.

The reason we feel it important to include this list of equipment is simple. IRS has continuously taken a strict approach in interpreting the 1978 Energy Tax Act. Without specific listing in the legislation, we have every reason, based on past experience, to believe we'll be right back where we were with a misguided IRS. S. 1288 ensures that the IRS must recognize specific items rather than allowing the Service to misinterpret broad language.

The second critical conservation incentive provided by S. 1288 is raising the tax credit to 20%. A question often asked of food stores is that if our energy costs are so high (and they are our second highest cost, below only labor), wouldn't we invest without any credit at all, or wouldn't 10% be adequate.

The answer is no. Let me first address why we need any credit at all. When a new food store is built, it is easier and more economical to install the types of energy conserving equipment listed in the bill. For example, last month I visited a new supermarket in Denver which used its food equipment to heat and cool the store. Throughout the rest of the country as well, new food stores are being built which use the heat emitted by the refrigeration equipment to heat the store air and water.

These conservation gains are economical to install in new stores when being built. But for the upwards of 100,000 existing food stores, it is more economical to waste energy. With the costs involved in retrofitting an existing food store, the return on investment dictates that such retrofits are not cost effective. This decision may be right for the business, but it is certainly not in the national interest. Food stores and other commercial buildings need a tax credit if energy conservation retrofits are to be a sound option for business. The credit is even more critical for the small businessman.

The second question we are asked is why a 20% credit. I can answer this question from my own experience at Giant, one which I am sure is shared by businesses of all sizes. Each year there is only a limited amount of capital to spend. When I submit a budget request to purchase energy conserving equipment, I compete with other parts of my company for capital. Frequently, mine is a request to spend in order to save money against one to increase sales. Quite frankly, a 10% credit does little to enhance my request. But the 20% credit will provide the difference on the return on investment with which I can show management that it makes sound business sense to invest in the energy conserving equipment.

S. 1288 makes all the difference in getting over the financial hurdle preventing commercial buildings from installing energy conservation equipment. S. 1288 gives food stores the chance to make energy conserving investments now rather than wait until the supply of energy changes drastically.

Thank you.

Senator WALLOP. Mr. Peabody.

STATEMENT OF ENDICOTT PEABODY, GENERAL COUNSEL, NATIONAL MASS RETAILING INSTITUTE, NEW YORK, N.Y.

Mr. PEABODY. Thank you, Senator Wallop. In the interest of saving time I will submit my statement and just emphasize one or two points, if I may.

Senator WALLOP. By all means.

Mr. PEABODY. Mr. Chairman, my name is Endicott Peabody, and I am general counsel to the National Mass Retailing Institute, a trade association headquartered in New York which represents the discount merchandising industry. NMRI has over 10,000 member stores in 48 States and over $50 billion in annual sales. And after the food people, we are the largest retailing organization in the country.

We strongly support S. 1288, the Commercial Business Energy Tax Credit Act of 1981 introduced by Senator Durenberger, and we regret deeply that events on the Finance Committee prevented it from coming up for consideration, as sponsored by the committee, on the Senate floor. Indeed, had you been able to do so, undoubtedly it would have been passed.

We urge its adoption now to correct not only the misguided energy regulations published earlier this year by the Treasury Department but also to further the national goal of reducing our dependence on foreign oil, as so well expressed by Senator Durenberger. The Durenberger bill will also expand the types of energy conserving equipment which qualify for the credits as well as increase the tax credit from 10 to 20 percent.

Now, Mr. Chairman, the retail sector of the economy currently accounts for approximately 15 percent of all energy consumed in this country. It doesn't make sense to encourage conservation by providing credits for some business or industry groups and arbitrarily denying them for others. While it may be economical to install energy efficient systems in new stores that are being planned, and this is being done; as is the case with the FMI, most of our stores are of older vintage, and it just isn't economically justifiable to retrofit or convert them without this incentive.

The bottom line is, without this incentive retailers simply will not finance expensive retrofit systems in existing stores. We believe that if you pass this bill, S. 1288 will result in saving the equivalent of over 700 million barrels of oil over the life of the bill; so that enactment of S. 1288 will provide retailers with the incentives needed to invest now in energy conservation for existing stores and buildings.

Mr. Chairman, both your statement and Senator Durenberger's, I in behalf of my organization subscribe to fully, and I hope that they are listened to at the other end of Pennsylvania Avenue as we are listening to them here.

I am afraid that during the past several years the word "conservation" has become a dirty word, a dirty word as a substitute for the production of new energy. But as you well indicated, Mr. Chairman, conservation is a quick way of producing energy now, and a quick and inexpensive way of producing it without having to put in a great deal of investment. So this tax credit which is provided in

S. 1288 is going to provide this new energy that can be used by conservation for other purposes and save us a great deal of money.

The GAO came out recently, on September 29, with a report which indicated that this country is just not prepared for an international oil crisis. Much of our attention is now on Egypt and the Middle East, to try to protect our oil lines and our oil around the Cape of Good Hope, and we know it is a dangerous situation. One of the things we should do first is to invest in conservation so to insure that we will not be so energy dependent that a real major crisis and perhaps a catastrophy can result.

I support fully your statements and hope that early action can be taken by the Finance Committee and by the Senate, and that the House can follow suit soon after.

Thank you.

Senator WALLOP. Thank you, Mr. Peabody.

[The prepared statement follows:]

Statement of Endicott Peabody General Counsel National Mass Retailing Institute

Mr. Chairman, my name is Endicott Peabody, and I am General Counsel to the National Mass Retailing Institute ("NMRI"), a trade association headquartered in New York which represents the discount merchandising industry. NMRI has over 10,000 member stores in 48 states and over $50 billion in annual sales. On behalf of NMRI, I am pleased to have this opportunity to testify in support of legislation to extend energy tax credits to retailers and other commercial sectors of the economy.

NMRI strongly supports S. 1288, the Commercial Business Energy Tax Credit Act of 1981 introduced by Senator Durenberger. We urge its adoption to correct the misguided energy regulations published earlier this year by the Treasury Department, as well as to further the national energy goal of reducing our dependence on foreign oil.

The Energy Tax Act of 1978 authorized tax credits to encourage business to invest in specially defined energy-saving equipment. On January 19 of this year, the Treasury Department issued final regulations implementing the Energy Tax Act which limit the credits to the industrial and manufacturing sectors of the economy and arbitrarily exclude retailers from eligibility. We believe these regulations, issued on the last day of the previous Administration, are contrary to the legislative history of the 1978 Act, as well as to the stated energy policy of this country.

S. 1288 would clarify existing law to insure that the retail sector of the economy is eligible for the same tax credits as the industrial and manufacturing sectors. The Durenberger bill, however, would also expand the types of energy-conserving equipment which qualify for the credits, as well as increase the tax credit from 10% to 20%. In addition to automatic energy control systems which are eligible under current law, commercial equipment such as energy redistribution systems, energy-efficient lighting systems, energy storage systems, energy-efficient refrigeration equipment, as well as insulation would all qualify for the business energy tax credit under the Durenberger bill.

The retail sector of the economy currently accounts for approximately 15% of all energy consumed in this country. It does not make sense to encourage conservation by providing credits for some business or industry groups and arbitrarily denying them for other groups. While it may be economical to install energy efficient systems in new stores that are being planned or built without the incentive of a tax credit, most NMRI members operate stores of older vintage where it is often not economically justifiable to retrofit or convert existing energy equipment. This problem is greater for retailers than for other groups, because as a labor intensive industry which pays among the highest effective corporate income tax rates of any major business group, the competing demands on a retailer's limited capital dictate that energy conservation take second place to expenditures, such as store expansion, which directly lead to increased sales. The bottom line is that, without an economic incentive, retailers simply will not finance expensive retrofit systems in existing stores, and energy will continue to be wasted.

Indeed, by expanding energy tax credits and by making the commercial sector eligible to use them, it is estimated that S. 1288 will result in saving the equivalent of over 700 million barrels of oil over the life of the bill. The benefits to the country of savings of this magnitude are substantial, and it makes no difference to the oil sheikdoms from which sector of our economy they are derived.

Enactment of S. 1288 will provide retailers the incentives needed to invest now in energy conservation for existing stores and buildings. NMRI strongly supports prompt action on S. 1288, not only to eliminate the discrimination in the current regulations, but most importantly as an effective way to reduce energy waste and lessen our still dangerous dependence on foreign oil.

Thank you very much.

Senator WALLOP. Mr. Register.

STATEMENT OF FRANK D. REGISTER, PRESIDENT, NATIONAL ASSOCIATION OF RETAIL GROCERS OF THE UNITED STATES, RESTON, VA.

Mr. REGISTER. Thank you, Mr. Chairman. I am Frank D. Register, President of the National Association of Retail Grocers of the United States. With your permission I am accompanied by counsel in Thomas Wayne. It is a pleasure for me to express our strong support for the availability of energy tax credits for retail grocers and other commercial energy users. NARGUS is a national nonprofit trade association representing approximately 40,000 owners and operators of retail grocery stores of all sizes and all types.

With the advent of high energy costs, energy efficient equipment has become essential to effective retail store operations. However, the high interest rates of today's economy makes it extremely difficult for independent retail grocers to invest in more efficient equipment such as computerized heat recovery systems. Borrowing money at prime plus 1 or 2 percent is prohibitive. Independent retail grocers do not have the same access to capital markets as large concerns.

Combining the high interest rates with the Internal Revenue Service's interpretation against specially defined energy property tax credits for commercial facilities worsens independent grocers' opportunities for improving operations.

On January 23, 1981, final IRS regulations for specially defined energy property under the energy tax credit required installation in an existing commercial facility and the principal purpose to be reduction of energy consumed or heat wasted in a commercial process. The equipment installed in connection with retail sales, general office use, and residential use was held not to be a commercial process. The present IRS interpretation discriminates against commercial business, particularly in food retailing.

Proper control of the environment of a retail food store is essential to maintenance and preservation of food products. Development of sophisticated heating, cooling and refrigeration equipment systems enable efficient retail food store energy consumption in such a necessary environment. However, in today's economy, without the energy tax credit retail grocers are denied the benefit of an important tax incentive to make the total investment. S. 1288 would define the eligibility for the energy tax credit to include "industrial, retail, or commercial process, activity, building or equipment." This would significantly clarify the IRS interpretations so that retail grocers would be able to make effective energy conservation and investment decisions. In addition, eligible specially defined energy property would be broadened to include energy management systems, automatic equipmentsetting controls, heat pumps, energy-redistribution systems, programmable timers, refrigeration equipment devices, and others.

Especially important is the proposal that the energy tax credit be increased to 20 percent through 1986. This would be a major financial incentive to encourage retail grocers to implement energy conservation measures.

NARGUS wishes to take this opportunity to make four recommendations regarding the legislation pending.

S. 1288 establishes retail grocers' eligibility for the specially defined energy property tax credit by removing the dependency on commercial process and basing the connection on an existing industrial, retail or commercial process, activity, facility, building, or equipment. Correction of the IRS interpretation should be retroactive to the effective date of the Energy Tax Act of 1978.

Two, the energy investment tax credit for the specially defined energy property is scheduled to expire December 31, 1982. NARGUS strongly recommends extension of the energy tax credit through 1986. The need for incentives for energy efficiency and conservation continues as a national priority.

Three, increasing the energy tax credit from 10 percent to 20 percent is especially important to small- and medium-sized retail grocers. Retail grocers require a favorable tax policy to improve energy systems in stores.

And, finally, S. 1288 provides a clear list of eligible energy property so that a further IRS interpretation would not defeat the purpose of the legislation.

We thank you for the privilege of being here, Senator.

Senator WALLOP. Thank you, Mr. Register.

[The prepared statement follows:]

STATEMENT
ON
ENERGY TAX CREDITS
BY
FRANK D. REGISTER, PRESIDENT
NATIONAL ASSOCIATION OF RETAIL GROCERS OF THE UNITED STATES
BEFORE
SENATE FINANCE SUBCOMMITTEE
ON ENERGY AND AGRICULTURAL TAXATION
October 19, 1981

Mr. Chairman and members of the committee, I'm Frank D. Register, President of the National Association of Retail Grocers of the United States (NARGUS). It is a pleasure for me to express NARGUS' strong support for the availability of energy tax credits for retail grocers and other commercial energy users.

NARGUS is a national nonprofit trade association representing approximately 40,000 owners and operators of retail grocery stores. NARGUS members own and operate supermarkets, small and medium size grocery stores, box stores, warehouse stores, and convenience stores. NARGUS members serve rural, suburban, urban, and inner-city communities.

Energy costs are a significant factor in the operation of retail food stores. It has become commonplace for retail grocers to report energy costs exceeding rent. In general, 12 percent of a retail food store's total energy consumption is used for heating and cooling, 20 percent is utilized for lighting, and over 57 percent for refrigeration equipment, including fans and anti-sweat devices.

With the advent of high energy costs energy efficient equipment has become essential to effective retail store operations. However, the high interest rates of today's economy makes it extremely difficult for independent retail grocers to invest in more efficient equipment, such as computerized heat recovery systems. Borrowing money at prime plus one or two percent is prohibitive. Independent retail grocers do not have the same access to capital markets as large concerns.

Combining the high interest rates with the Internal Revenue Service's interpretation against specially defined energy property tax credits for commercial facilities worsens independent grocers' opportunities for improving operations.

On January 23, 1981 final IRS regulations for specially defined energy property under the energy tax credit required installation in an existing commercial facility and the principal purpose to be reduction of energy consumed or heat wasted in a commercial process. Equipment installed in connection with retail sales, general office use, and residential use was held not to be commercial process.

The present IRS interpretation discriminates against commercial business, particularly food retailing.

Proper control of the environment of a retail food store is essential to maintenance and preservation of food products. Development of sophisticated heating, cooling, and refrigeration equipment systems enable efficient retail food store energy consumption in such a necessary environment. However, in today's economy without the energy tax credit retail grocers are denied the benefit of an important tax incentive to make the investment.

The importance of the energy tax credit to the retail food industry has been recognized by members of Congress. Several measures have been introduced by members of Congress to clearly establish commercial businesses' eligibility for the energy tax credit. S. 475 and S. 1288 have been introduced by Senator David Durenberger (R.MN), S. 750 is sponsored by Senator Malcolm Wallop (R.WY), H.R. 1378 has been introduced by Representative Bill Frenzel (R.MN).

S. 475 and H.R. 1378 would change the emphasis from commercial process to commercial activity to correct the IRS interpretation. S. 750 would also make "activities" eligible for the energy tax credit under specially defined energy property, although the primary emphasis is on industrial use.

S. 1288 would define the eligibility for the energy tax credit to include "industrial, retail or commercial process, activity, building or equipment." This would significally clarify the IRS interpretation so that retail grocers would be able to make effective energy conservation and investment decisions. In addition, eligible specially defined energy property would be broadened to include energy management systems, automatic equipment setting controls, heat pumps, energy redistribtion systems, programable timers, refrigeration equipment devices, and others.

Especially important is the proposal that the energy tax credit be increased to 20 percent through 1986. This would be a major financial incentive to encourage retail grocers to implement energy conservation measures.

NARGUS wishes to take this opportunity to make several recommendations regarding the legislation pending.

1. S. 1288 establishes retail grocers' eligibility for the specially defined energy property tax credit by removing the dependency on commercial process and basing the connection on an "existing industrial, retail or commercial process, activity, facility, building or equipment." Correction of the IRS interpretation should be retroactive to the effective date of the Energy Tax Act of 1978.
2. The energy investment tax credit for specially defined energy property is scheduled to expire December 31, 1982. NARGUS strongly recommends extension of the energy tax credit through 1986. The need for incentives for energy efficiency and conservation continues as a national priority.
3. Increasing the energy tax credit from 10 percent to 20 percent is especially important to small and medium-sized retail grocers. Retail grocers require a favorable tax policy to improve energy systems in stores.
4. S. 1288 provides a clear list of eligible energy property so that a further IRS interpretation would not defeat the purpose of the legislation.

Senator WALLOP. Mr. Bailey.

STATEMENT OF JOHN BAILEY, VICE PRESIDENT OF PUBLIC AFFAIRS, ACCOMPANIED BY PAMELA MAGADANCE, MANAGER OF FEDERAL TAX RESEARCH, CORPORATE TAX DEPARTMENT, REPRESENTING HONEYWELL, INC., MINNEAPOLIS, MINN.

Mr. BAILEY. Thank you. I am John Bailey. With me is Pamela Magadance. We represent Honeywell, Inc, a leading supplier of energy controls for residential and commercial buildings and a pioneer in totally automatic control systems. In addition to the products we manufacture, we also offer installation and maintenance services for controls in commercial buildings. Pamela is the manager of Federal Tax Research in our Corporate Tax Department and is present to assist me in answering any of your questions.

My position at Honeywell is vice president of the Energy Products Center. This center is responsible for the sale of energy-management controls and systems for commercial, industrial, and institutional buildings. We sell our systems through authorized energy-management distributors who, in turn, sell them to contractors. These contractors sell the systems to the building owners. So our energy controls end up in restaurants, hotels, motels, supermarkets, office buildings, and various retail stores owned by individuals, franchises, and corporations.

Mr. Chairman, Honeywell believes that energy tax credits have been effective in promoting the national goal of energy conservation. I would like to use my limited time before this subcommittee to speak about one specific provision of S. 1288 and S. 750 which also makes up a separate bill which Senator Durenberger has introduced. That provision would correct what we believe to be an erroneous interpretation of the business energy tax provisions of the Energy Tax Act of 1978.

We are concerned with the definition used for the term "commercial process." Almost 2 years after the credit was enacted and our customers' customers had been claiming the credit, the IRS adopted an unusually restrictive interpretation of the word "process," to deny the credit to systems used in commercial buildings such as retail stores and office buildings.

A heating, ventilating and air-conditioning system can be viewed as a process, since it processes the air furnished to our building, either heating or cooling it as required. After reading the statute, committee reports and conference reports, we believe Congress's intent at the time the energy credit was instituted was clearly to encourage energy conservation, and the credits should be received by all industrial and commercial establishments that install the energy-saving equipment as specified in the law. Since there are no apparent energy tax or policy considerations which support the interpretation proposed by the IRS, we recommend that the words "commercial process" be replaced with the words "commercial activity."

My company has demonstrated over and over again that automatic energy control systems save energy, and lots of it. Yet, try as we might, even with the aid of rapidly increasing energy costs, less than 5 percent of the commercial buildings in this country are equipped with such controls today. At this time nothing will further impede our painfully slow progress and that of our competitors more effectively than an inconsistent and mystifying regulation which suddenly and unexpectedly reverses our customers' expectation for tax credits, an expectation that seemed reasonable after reading the statute.

Building owners in the past have not been motivated to make investments in this type of equipment for many different reasons, among them: years of cheap, available energy leading to complacency. Second, energy cost pass-through clauses in leases prevent owners from benefiting from energy savings investments; and alternative uses for capital have appeared more attractive, recently. Other reasons include the recent recession, high interest rates and inflation, all taking what available capital there is.

Therefore, cashflow is a primary concern to the owners of commercial buildings, and the impact of tax credits is particularly pronounced on the business's cashflow. The availability or nonavailability of these credits has a major impact on the decision to invest or not invest in automatic energy control equipment.

If our country had decades in which to tap the energy that could be made available through these systems, then the marketplace operating through increasing energy prices would be a sufficient inducement to invest in conservation. But it seems that Congress, in enacting the Tax Act of 1978, did not believe that the country could wait for the marketplace alone to make the retrofit possible.

Pam and I will be happy to answer any questions that you may have.

Senator WALLOP. Thank you very much, sir.

[The prepared statement follows:]

TESTIMONY TO THE SENATE FINANCE COMMITTEE'S SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
ON S. 1288 AND S. 750
ON THE BUSINESS INVESTMENT CREDIT FOR ENERGY PROPERTY
OCTOBER 19, 1981
BY
JOHN BAILEY
HONEYWELL INC.
MINNEAPOLIS, MINNESOTA

GOOD MORNING, LADIES AND GENTLEMEN. I AM JOHN BAILEY, AND WITH ME IS PAMELA MAGADANCE. WE REPRESENT HONEYWELL INCORPORATED, THE SEVENTY-NINTH LARGEST INDUSTRIAL CORPORATION IN THE UNITED STATES.

HONEYWELL IS A LEADING SUPPLIER OF AUTOMATIC ENERGY CONTROL SYSTEMS FOR BOTH COMMERCIAL AND RESIDENTIAL BUILDINGS. WE'VE BEEN A TOP SUPPLIER OF ENERGY CONTROLS FOR COMMERCIAL BUILDINGS SINCE THE 1940'S AND PIONEERED THE INTRODUCTION OF TOTALLY AUTOMATIC CONTROL SYSTEMS IN THE EARLY 50'S. IN ADDITION TO THE PRODUCTS WE MANUFACTURE, WE ALSO OFFER A FULL LINE OF INSTALLATION AND MAINTENANCE SERVICES FOR CONTROLS IN COMMERCIAL BUILDINGS.

PAMELA IS THE MANAGER OF FEDERAL TAX RESEARCH IN OUR CORPORATE TAX DEPARTMENT AND IS PRESENT TO ASSIST IN ANSWERING YOUR QUESTIONS.

MY OWN POSITION AT HONEYWELL IS VICE PRESIDENT OF ENERGY PRODUCTS CENTER. THIS CENTER IS RESPONSIBLE FOR THE MANUFACTURE AND SALES OF ENERGY MANAGEMENT CONTROLS AND SYSTEMS FOR COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL BUILDINGS. OUR PRODUCTS INCLUDE EVERYTHING FROM THERMOSTATIC RADIATOR VALVES WHICH CONTROL THE

TEMPERATURE SETTING OF STEAM AND WATER RADIATORS, TO VERY SOPHISTICATED LOAD MANAGEMENT SYSTEMS WHICH CONTROL THE HEATING, VENTILATION, AIR CONDITIONING, REFRIGERATION, AND LIGHTING SYSTEMS TO PROVIDE ENERGY SAVINGS.

THE ENERGY PRODUCTS CENTER SELLS AUTOMATIC ENERGY CONTROLS DELIVERED, THAT IS UNDER A TWO STEP DISTRIBUTING SYSTEM. WE SELL OUR ENERGY MANAGEMENT SYSTEMS TO AUTHORIZED ENERGY MANAGEMENT DISTRIBUTORS WHO SELL TO CONTRACTORS. THESE CONTRACTORS (AND, BY THE WAY, WE'VE TRAINED OVER 2,000 INDEPENDENT CONTRACTORS TO BECOME SPECIALISTS IN THE INSTALLATION AND APPLICATION OF ENERGY MANAGEMENT CONTROLS) SELL THE SYSTEMS TO THE BUILDING OWNER. SO OUR ENERGY CONTROLS END UP IN RESTAURANTS, HOTEL/MOTELS, SUPERMARKETS, OFFICE BUILDINGS, AND VARIOUS RETAIL STORES OWNED BY INDIVIDUALS, FRANCHISES, AND CORPORATIONS.

MR. CHAIRMAN, HONEYWELL BELIEVES THAT ENERGY TAX CREDITS HAVE BEEN EFFECTIVE IN PROMOTING THE NATIONAL GOAL OF ENERGY CONSERVATION. MANY OF THE OTHER PEOPLE ON THIS PANEL WHO TESTIFY TODAY WILL SPEAK ON THE WISDOM OF EXPANDING THE PRESENT ENERGY TAX CREDITS TO MAKE THEM MORE EFFECTIVE.

I WOULD LIKE TO USE MY LIMITED TIME BEFORE THIS SUBCOMMITTEE TO SPEAK ABOUT ONE SPECIFIC PROVISION IN S. 1288 AND S. 750 -- AND WHICH ALSO MAKES UP A SEPARATE BILL, S. 475. THAT PROVISION WOULD CORRECT WHAT WE BELIEVE TO BE AN ERRONEOUS INTERPRETATION OF THE BUSINESS ENERGY TAX PROVISIONS OF THE ENERGY TAX ACT OF 1978.

WE ARE CONCERNED WITH THE DEFINITION USED FOR THE TERM "COMMERCIAL PROCESS." UNDER THE REGULATIONS ISSUED BY THE IRS, AUTOMATIC ENERGY CONTROL SYSTEMS, INSTALLED IN RETAIL, OFFICE, AND OTHER COMMERCIAL BUILDINGS, WOULD NOT BE ELIGIBLE FOR AN ENERGY TAX CREDIT.

ALMOST TWO YEARS AFTER THE CREDIT WAS ENACTED AND OUR CUSTOMERS' CUSTOMERS HAD BEEN CLAIMING THE CREDIT, THE IRS ADOPTED AN UNUSUALLY RESTRICTIVE INTERPRETATION OF THE WORD "PROCESS" TO REACH A RESULT AT VARIANCE WITH THE CONGRESSIONAL INTENT AS EXPRESSED IN THE COMMITTEE REPORTS.

THE LANGUAGE OF THE STATUTE DOES NOT COMPEL THIS RESULT. A HEATING, VENTILATING AND AIR CONDITIONING SYSTEM CAN BE VIEWED AS A PROCESS, SINCE IT PROCESSES THE AIR FURNISHED TO A BUILDING, EITHER HEATING OR COOLING IT AS REQUIRED.

ANY AMBIGUITY IN THE LAW SHOULD BE RESOLVED IN INTERPRETING THE STATUTE IN LIGHT OF ITS PURPOSE. THERE IS NO CONCEIVABLE PURPOSE SERVED BY DRAWING A DISTINCTION FOR PURPOSES OF ENERGY CREDITS BETWEEN A LAUNDRY AND SHOPPING CENTER.

WE BELIEVE CONGRESS' INTENT AT THE TIME THE ENERGY CREDIT WAS INSTITUTED WAS CLEARLY TO ENCOURAGE ENERGY CONSERVATION, AND THE CREDIT SHOULD BE RECEIVED BY ALL INDUSTRIAL AND COMMERCIAL ESTABLISHMENTS THAT INSTALL THE ENERGY SAVING EQUIPMENT SPECIFIED IN THE LAW.

SINCE THERE ARE NO APPARENT ENERGY, TAX, OR POLICY CONSIDERATIONS WHICH SUPPORT THE INTERPRETATION PROPOSED BY THE IRS, WE RECOMMEND THAT THE WORDS "COMMERCIAL PROCESS" BE REPLACED WITH THE WORDS "COMMERCIAL ACTIVITY."

AN AUTOMATIC ENERGY CONTROL SYSTEM IN A LARGE COMMERCIAL BUILDING, MONITORS, SCHEDULES, AND CONTROLS THE ENERGY-CONSUMING EQUIPMENT IN THAT BUILDING. THESE SYSTEMS SAVE 25 TO 30 PERCENT OF THE ENERGY USED IN SUCH BUILDINGS BY: PROPER SCHEDULING (TURNING EQUIPMENT ON AND OFF AT THE PROPER TIME); DUTY CYCLING (TURNING EQUIPMENT OFF FOR SPECIFIED PERIODS EVERY HOUR); USING OUTSIDE AIR WHEN THE TEMPERATURE AND HUMIDITY ARE WITHIN PROPER RANGES; AND BY CONTROLLING THE BUILDING'S CENTRAL PLANT. THIS CAN ALL BE DONE WITH NO LOSS OF COMFORT TO THE PEOPLE WITHIN THE BUILDING. DOCUMENTED CASES OF SUCH CONSERVATION ARE AVAILABLE UPON REQUEST. IN ADDITION, ON-SITE DECENTRALIZED ENERGY MANAGEMENT AND LOAD CONTROL SYSTEMS OFFER SIMILAR ENERGY SAVINGS.

MY COMPANY HAS DEMONSTRATED OVER AND OVER AGAIN THAT AUTOMATIC ENERGY CONTROL SYSTEMS SAVE ENERGY AND LOTS OF IT. YET TRY AS WE MIGHT, EVEN WITH THE AID OF RAPIDLY INCREASING ENERGY COSTS, ONLY A TINY FRACTION OF THE COMMERCIAL BUILDINGS IN THIS COUNTRY ARE YET EQUIPPED WITH SUCH CONTROLS. AT THIS TIME, NOTHING WILL FURTHER IMPEDE OUR PAINFULLY SLOW PROGRESS, AND THAT OF OUR COMPETITORS, MORE EFFECTIVELY THAN AN INCONSISTENT AND MYSTIFYING REGULATION WHICH SUDDENLY AND UNEXPECTEDLY REVERSES OUR CUSTOMERS' EXPECTATIONS FOR TAX CREDITS: AN EXPECTATION THAT SEEMED REASONABLE AFTER READING THE STATUTE.

BUILDING OWNERS IN THE PAST HAVE NOT BEEN MOTIVATED TO MAKE THE INVESTMENT IN THIS TYPE OF EQUIPMENT. THERE ARE A NUMBER OF REASONS FOR THIS:

* YEARS OF CHEAP, AVAILABLE ENERGY LED TO COMPLACENCY;
* ENERGY COST PASS-THROUGH CLAUSES IN LEASES PREVENT OWNERS FROM BENEFITTING FROM ENERGY SAVINGS INVESTMENTS;
* ALTERNATE USES FOR CAPITAL HAVE APPEARED MORE ATTRACTIVE.

TO DATE, HOWEVER, THE MARKET PENETRATION OF AUTOMATIC ENERGY MANAGEMENT CONTROL SYSTEMS HAS BEEN MINIMAL. LESS THAN 5 PERCENT OF ALL COMMERCIAL BUILDINGS HAVE INSTALLED ANY KIND OF AUTOMATIC CONTROLS FROM ANY MANUFACTURER. THE RECESSION, HIGH INTEREST RATES AND INFLATION HAVE ALL LIMITED THE AVAILABILITY OF CAPITAL FOR INVESTMENT IN CONSERVATION.

THEREFORE, CASH FLOW IS A PRIMARY CONCERN TO OWNERS OF COMMERCIAL BUILDINGS AND THE IMPACT OF TAX CREDITS IS PARTICULARLY PRONOUNCED ON THE BUSINESS'S CASH FLOW. THE AVAILABILITY, OR NON-AVAILABILITY, OF THESE CREDITS HAVE A MAJOR IMPACT ON THE DECISION TO INVEST, OR NOT TO INVEST, IN AUTOMATIC ENERGY CONTROL EQUIPMENT. COMMERCIAL BUILDING OWNERS WILL DEMAND CASH FLOW ANALYSIS BEFORE PURCHASING THESE SYSTEMS AND A 10 PERCENT TAX CREDIT CAN GREATLY IMPROVE CASH FLOW.

IF OUR COUNTRY HAD DECADES IN WHICH TO TAP THE ENERGY THAT COULD BE MADE AVAILABLE THROUGH THESE SYSTEMS, THEN THE MARKET PLACE, OPERATING THROUGH INCREASING ENERGY PRICES, WOULD BE A SUFFICIENT INDUCEMENT FOR BUSINESSES TO INVEST IN CONSERVATION. BUT IT SEEMS THAT CONGRESS, IN ENACTING THE ENERGY TAX ACT OF 1978, DID NOT BELIEVE THAT THE COUNTRY COULD WAIT FOR THE MARKETPLACE ALONE TO MAKE RETROFIT PROFITABLE.

PAM OR I WOULD BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE. THANK YOU.

Senator **Wallop**. Senator Durenberger?

Senator **Durenberger**. Mr. Bailey, can you believe that the Senator from Iowa, on my right, does not know where Iowa is going to be beaten by Minnesota next Saturday? [Laughter.]

Mr. **Bailey**. I can't believe that.

Senator **Durenberger**. Let me ask you a couple of questions about Honeywell, then I have some questions of the entire panel.

Approximately what percent of Honeywell's business is in energy conservation?

Mr. **Bailey**. In energy conservation, we usually talk about energy conservation or energy driven, and that means it relates directly to the control of energy. That is about 50 percent.

Senator **Durenberger**. Fifty? All right. I remember that, during the height of the 1979 crisis, Honeywell was actually hiring a lot of people to produce clock thermostats and control systems. Has that business declined since the energy crisis went off the front pages?

Mr. **Bailey**. That business, right now, due to the low level of housing starts in the United State, has declined recently. Yes.

Senator **Durenberger**. What do you attribute that to?

Mr. **Bailey**. Well, there is a decline in the awareness of the cost of energy. I think the discomfort zone after a series of price increases, people are going to live with it. Plus, the whole level of housing starts today is declining. It is two effects. High interest rates probably affect them both.

Senator **Durenberger**. And what about the President's statement suggesting repeal of conservation credits? In your judgment, what effect will that have on the market for control systems and conservation devices?

Mr. **Bailey**. We believe that conservation credits are a positive influence in the conservation of energy, and therefore, anything to repeal that would be negative.

Senator **Durenberger**. Let me ask a couple of questions, then, of the rest of the panel that relates to your particular businesses.

How much does the average business, in your particular line of business, require as a rate of return to justify an investment in energy-conservation properties, and what kind of payback period is required in today's climate, and what kind of impact does a credit of, say, 20 percent have on that payback period? I imagine this will vary from one business to the other.

Mr. **Freedman**. Senator, in the supermarket industry a typical payback for energy-conservation improvements, on a simple basis is 2 years. With such a quick payback, we usually don't get into the more involved formulas. Without the energy tax credit—it is the engineers against the merchandisers, and the money will usually be put into increasing sales rather than into increasing savings. That is what usually happens. And we sincerely believe that the 20 percent credit will tip the scales, and it would be a big push on energy-conservation measures.

Senator **Durenberger**. Mr. Krautkramer.

Mr. **Krautkramer**. I just walked through a fellow restaurateur's restaurant. I don't charge fees, but I know a lot of people in Wisconsin in the restaurant business, and I have gone to help a couple of them walk through their restaurants. I walked through a restaurant larger than mine and recommended, for example, that little black box I talked about, a load-shedding device. Seven thousand dollars. He would have to borrow the money to do that. So if you are talking about borrowing money at 18 percent or 19 percent, you are talking about at least a 22 or 23 percent return on your investment. And I typically look at a payback period of 2 years, max, or 2½, max.

I think the small individual business operator doesn't have—and that is what we are getting at—he doesn't have that kind of bucks. Now, I was talking before about $50,000 for a hood. I still can't justify $50,000 for a hood; that's 5 percent of my total sales every year. I can't justify that kind of an expense. I know it would save money. I could probably heat my whole restaurant with the heat I would save, just what I am pumping outside right now. But I can't justify that kind of expense, because I would have to borrow the money at 18 percent, and without tax credits I may show a profit at the end of the year, but there is no money in the kitty, mind you. There is a profit on paper, but there is no money in the kitty.

Senator **Durenberger**. Thank you.

Does anyone else want to respond?

Mr. **Coats**. The hospitality or the hotel industry generally looks at a payback similar to what is being referred to here, but we look at something even up to maybe 5 years, and beyond that is totally unacceptable. A 5-year payback for the company that I represent has been an acceptable situation. But many of these things that we are talking about, these energy-conservation things that we are talking about, even exceed that time which, without the tax credit, really removes the incentive completely for doing any of these things, as far as the installation of this new technology that is in the marketplace today.

Senator **Durenberger**. Anyone else?

[No response.]

Senator **Durenberger**. I have one last question, Mr. Chairman. This is the one that Packwood always pulls out on the Taxation Subcommittee, and so I thought it is appropriate that we ask it here. I think Mr. Register sort of addressed this when he took the bill apart into some of the things that he did, and this is one of those prioritization kinds of questions.

You know 475 overturns the IRS decision on energy control systems, and in S. 1288 we add energy properties to the list. We say that the principal purpose of investment does not have to be conservation, it just has to have an end result of conservation. We extend the credit to 20 percent, and we change the sunset date from 1983 to 1987.

From your various perspectives, would you react to the importance of each of these provisions and try to prioritize them for us, if you can?

Mr. **Freedman**. Senator, of course, the top priority is the 20 percent energy tax credit. We really wanted 30 percent, but we have empathy for the Treasury Department; and we thought 10 percent was too little; so we think 20 percent is the correct number.

I would think, also, it is very important in your bill that there is a laundry list of specific energy-saving requirements. We really don't want our accountants to have to spend their time arguing with the Internal Revenue Service as to what is eligible and what is not eligible, as happened in the past. So we believe that the laundry list of specific items is extremely important to us.

Senator DURENBERGER. Any other reaction?

Mr. REGISTER. I would more or less agree with Mr. Freedman, there. But we are concerned that the retail establishment, at least, under the IRS regulation was discriminated against. So this bill tends to rectify that, and hopefully also to go to 20 percent would be our objective.

Mr. KRAUTKRAMER. The only thing I am saying is, for example, why would I replace that hood if it works perfectly? Or why would I replace that dishwasher if it works perfectly, to save energy, if I can't justify an economic return on it? In my small operation if I am justifying that kind of an expense, I have to justify it on an economic basis or I am going to be bankrupt 3 years down the pike. So I have to include that 20-percent energy tax credit in my economic justification. That is the only reason that I can replace that piece of equipment. I will save energy, but the only way I can do it is if I can justify it economically. And I know energy is going to cost more.

Wisconsin Electric Power has raised our rates 30 percent in the last year, and Wisconsin Gas Co., 25 percent. With energy costs going like that in our particular area, a lot of places can't afford to stay in business. Now, I am talking about the small guy, who I think is the backbone of our industry here in the United States.

Senator DURENBERGER. Thank you very much, Mr. Chairman.

Senator WALLOP. Senator Grassley.

Senator GRASSLEY. First of all, I ask any or all of you, how much of an incentive, now, is the energy tax credits for a decision to proceed with energy conservation as opposed to 3 or 4 years ago before energy was deregulated?

Mr. KRAUTKRAMER. I will give you a good example of that. I get energy tax credits for insulating my home, which is next door to my restaurant. I mean, it is two blocks away. So I thoroughly insulated our home, and I am paying the same budget gas bill, if you will, that I was 3 years ago. OK. Now, I don't get anything for insulating my restaurant, because it is a commercial property. I have done so, because we could afford to do it, No. 1, and I knew how to do it, No. 2, because of my engineering expertise, and I could identify it through a gas company scan, et cetera.

Now, what about owner-operators who don't have that ability, didn't get a free gas company scan of their restaurant, who don't have that expertise? They don't get energy tax credits for it, and there they sit.

Senator GRASSLEY. All right. But the point of my question is that the tax credit would be less of an incentive today than 4 years ago when energy was controlled and there was not the incentive, because of higher costs today, to conserve.

Mr. KRAUTKRAMER. Well, I think decontrol of natural gas will be a problem.

Senator GRASSLEY. Well, we have had some warning of the decontrol of natural gas in the last 4 years. But we have also had the decontrol of oil in January of this year, completely decontrolled, or even gradual decontrols since June of 1979.

Mr. **Krautkramer**. Well, my point is, although my gasoline price is staying the same, my electrical bill and my gas bill are going up 30 percent a year or 25. So I can drive my car to get to my restaurant, but I can't pay the electric bill once I get there.

Senator **Grassley**. So you are saying that it will be just as much of an incentive now, even though there is more of an incentive to save just because costs are higher, cost of energy is higher?

Mr. **Krautkramer**. Well, I think if you couple the two together, then you are going to make it. But I have a lot of restaurants right now, I talk to that 60 percent that are on their knees now because of the economy, et cetera, et cetera, and the triple whammy of higher energy costs, and anything we can do to help them is going to help.

Senator **Grassley**. Understand I am not trying to fault your answer, I just want to know the comparative relationship in each of your judgments.

Mr. **Coats**. I think a number of the no-cost, low-cost items that we attended to early in the energy crisis and in the energy conservation programs, this has all been accomplished pretty well. People have done this, and without major problems, in the hotel/motel industry. What we are talking about today are the things that you have to lay out hard dollars for and justify the capital expenditure for. Remember that the majority of your hotel/motel operators are 135-room size. These small operators just don't have that kind of money to lay out. They can't pay the interest that they would have to pay today to provide these items to do this additional savings, to accomplish the energy savings that we are looking for. There has to be some incentive up front, and this is provided for in S. 1288 as I see it, to go ahead with the reset control systems, the retrofit programs on boilers, and things of this nature, to really accomplish that which is in the best interest of our Nation and our industry.

Mr. **Freedman**. Senator, in the supermarket industry our utility bills are running approximately 1 percent of gross sales. The industry average for net profit after taxes is 0.98 percent, less than 1 percent. So we have a tremendous incentive to increase energy savings. And this bill S. 1288 will just accelerate that. So I think, as we said, it is good for the country, and it is good for our own businesses.

Senator **Wallop**. Thank you all very much. We will go on with the remaining panels. We appreciate your testimony this morning.

I would ask that a letter and related documents from Senator Kennedy be inserted in the record at the appropriate place.

Senator **Wallop**. The next panel is a panel, for 3 minutes each, Mr. David Thomas, vice president for Land Operations for Mustang Production Corp.; Mr. Floyd Tuominen, sales manager, American Hoist & Derrick, St. Paul, Minn., and deputy chairman of the Waste Equipment Manufacturers Institute, representing the Waste Equipment Manufacturers Institute, Washington, D.C.; Mr. M. J. Mighdoll, executive vice president, National Association of Recycling Industries, accompanied by Edward Merrigan; Mr. Morris Hershson, president, National Barrel & Drum Association, Washington, D.C.

Gentlemen, please proceed.

Mr. Thomas.

STATEMENTS OF A PANEL CONSISTING OF DAVID L. THOMAS, VICE PRESIDENT FOR LAND OPERATIONS FOR MUSTANG PRODUCTION CO., REPRESENTING MUSTANG FUEL CORP., OKLAHOMA CITY, OKLA.

Mr. THOMAS. My name is David Thomas. I am vice president of Mustang Production Co., a subsidiary of Mustang Fuel Corp. of Oklahoma City, Okla. On behalf of Mustang I would like to thank you, Chairman Wallop and the other members of the subcommittee, for permitting us to express our views on Senate bill 750.

Mustang fuel is a privately held diversified energy company which has over 30 years of successful history in the energy business. In addition to our involvement in oil and natural gas production and exploration, we are also involved in the production of energy from waste—municipal solid waste, as well as industrial waste. And it is this that has brought us to you today to present our views.

Mustang believes that it is the appropriate function of the private sector to lead the way on this financial risk-laden energy from waste frontier. In the past Congress has made available some energy-related tax credits to the private investor willing to assume the financial risk associated with the development of alternative energy projects. However, the time has come for the country to become more aggressive in its drive for domestic energy independence.

To accomplish this goal, additional legislation must be adopted that will encourage more private equity investment which, in turn, will reduce public-debt financing. Mustang believes that Senate bill 750 is a major and comprehensive step in the right direction. By increasing the energy investment tax credit to 20 percent, the bill creates a substantial economic incentive for private investors to take the large and necessary financial risk associated with energy and resource recovery projects.

In addition, I would like to make some comments regarding section 4 of Senate bill 750, which I will elaborate more on in our prepared statement:

No. 1, is that the definition of solid waste should be expanded to include materials that are characterized as semi-solid and liquid.

No. 2, the definitions of recycling equipment, and alternate energy equipment, should include equipment that not only converts but also processes the solid waste into a fuel or useful energy.

No. 3, equipment used at a qualified small power production facility or a qualified cogeneration facility should qualify for energy investment tax credits and should not be deemed public utility property.

In regard to section 2, the termination date for energy investment tax credits should be extended from December 31, 1986, to December 31, 1990, to more realistically reflect the time needed to plan and construct a facility using energy and resource recovery equipment.

On behalf of Mustang, I wish to thank you for this opportunity to present our position.

Senator WALLOP. Thank you very much, Mr. Thomas.

[The prepared statement follows:]

Statement of David L. Thomas
Mustang Production Company
before the
Subcommittee on Energy and Agricultural Taxation
of the
Committee on Finance

My name is David L. Thomas and I am Vice-President for Land Operations of Mustang Production Company, a subsidiary of Mustang Fuel Corporation. On behalf of Mustang, I would like to thank Chairman Wallop and the other members of the Subcommittee for this opportunity to express our views on S. 750, the Industrial Energy Security Tax Incentive Act of 1981.

Mustang is a privately held company headquartered in Oklahoma City, Oklahoma, with over thirty years of success in the energy industry. Mustang is involved in a wide variety of energy related activities including oil and gas exploration, natural gas processing and transmission, pipeline research and construction, and crude oil transportation. In addition to its involvement in these more traditional energy resources, Mustang is also playing a major role in the development of energy from waste. It is Mustang's strong commitment to developing useful forms of energy from America's vast resources of waste materials that generates our interest in S. 750.

Mustang believes that it is the appropriate function of the private sector to lead the way on the alternative energy frontier. In the past, Congress has made available some energy related tax credits to the private investor willing to assume the risks associated with the development of alternative energy projects. However, the time has come for the country to become more aggressive in its drive for domestic energy independence. To accomplish this goal, additional legislation must be adopted that will encourage private equity investment and which, in turn, will reduce public debt financing.

Mustang believes that S. 750 is a major and comprehensive step in the right direction. By increasing the energy investment tax credit to 20 percent the bill creates a substantial economic incentive for private investors to assume the large and necessary financial burdens associated with alternative energy projects. In addition, Mustang would take this opportunity to provide the following other comments relating to the provisions of Section 4 of S. 750 which deal with energy investment tax credits for "recycling equipment," "alternative energy property," and "public utility property."

I. Section 4(c): Recycling Equipment

Under present law, an energy investment tax credit can be claimed for equipment that is used to sort and prepare, or recycle solid waste to recover usable materials or to convert "solid waste" into a useful form of energy. The existing Internal Revenue Code does not define "solid waste." However, the Internal Revenue Service's regulations adopt the following definition of solid waste contained in § 203(4) of the

Solid Waste Disposal Act:

> "The term 'solid waste' means garbage, refuse, and other discarded solid materials, including solid waste materials resulting from industrial, commercial, and agricultural operations, and from community activities, but does not include solids or dissolved materials in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial waste water effluents, dissolved materials in irrigation return flows or other common water pollutants." Treas. Reg. §1.103-8(f)(2)(ii)(6).

This definition does not clearly indicate whether the tax credit is available for equipment which recycles otherwise unusable materials that are found in a semi-solid or liquid form into usable raw materials or forms of energy.

Mustang is in favor of the expanded definition of solid waste contained in S. 750 which includes other discarded solid, semi-solid and liquid materials, including materials resulting from industrial, commercial, agricultural and community activities. This provision encourages the recycling of valuable raw materials and energy sources that are not found in the solid form.

Furthermore, the existing language of I.R.C. §48(1)(6)(D) indicates that equipment used in the "conversion" of solid waste into a fuel or useful energy qualifies as recycling property. However, the statute does not define "conversion." It is important to emphasize that the technology whereby solid waste becomes a fuel involves no radical changes in the chemical or physical characteristics of the source material. The technology essentially requires that the solid waste be sorted, cleaned and shredded. As a result, Mustang believes that the refuse derived fuel ("RDF") technology is more accurately viewed as "processing" the raw material into an essentially different substance. Mustang is, therefore, in favor of the clarification of the language contained in S. 750 which extends the credit to equipment used for converting or processing solid waste into a fuel. In addition, the bill provides that "recycling equipment" includes property for unloading, transfer, storage, sorting and preparation of solid waste. We feel that these provisions will encourage investment and reduce the ambiguity in the law as it now exists.

II. Section 4(a): Alternate Energy Property

The existing language of I.R.C. §48(l)(3)(A)(iii) states that "alternate energy property" includes "equipment for converting an alternate substance into a synthetic liquid, gaseous, or solid fuel."

Systems can be designed which burn solid waste in boilers which power turbines for the generation of electricity. The equipment used in this type of system would not qualify as alternative energy property under the existing statutory language. Consequently, Mustang supports the amendment contained in Section 4(a)(i) of S. 750 which extends the alternative energy tax credit to equipment used to convert an alternate substance "into electricity."

Furthermore, in its regulations relating to the existing provisions of §48(l)(3)(A)(iii), the I.R.S. has stated that:

> "preparing an alternative substance for use as a fuel or feedstock or for conversion into a fuel does not create a new product if no chemical change occurs. For example, pelletizing, drying, compacting, and liquefying do not result in a new product if no chemical change occurs." Treas. Reg. §1.48(c)(2).

Given the requirements of Treas. Reg. §1.48(c)(2), the equipment used to process solid and liquid waste into usable fuels would not qualify as "alternative energy property" unless the process involved a chemical change in the original waste material. As explained previously, the technology whereby solid waste is turned into RDF does not involve such a chemical change; rather, the technology essentially requires that the solid waste be sorted, cleaned and shredded. As a result, Mustang would advocate the deletion of the chemical change requirement and the extension of the "alternative energy property" credit to equipment which is used either to "convert or process" alternative substances into a synthetic fuel.

The provisions of Section 4(a)(4) of S. 750 would eliminate the chemical change requirement in order for a substance to qualify as an "alternate substance" by stating:

> "The term 'alternate substance' includes...any other product produced from an alternate substance, whether or not such produce has undergone a chemical change in the process of its production."

Mustang believes the language quoted above from Section 4(a)(4) does not adequately address the real problem associated with the chemical change requirement since even under the existing statute any substance other than oil, natural gas or any product of oil or natural gas already qualifies automatically as an "alternate substance." The problem to be rectified is whether a chemical change is required to "convert" an alternative substance into a "synthetic" liquid, gaseous, or solid fuel. By adding the phrase "converting or processing" to the existing language of I.R.C. 48(1)(3)(A)(iii), it would eliminate the necessity to effect a chemical change in the original alternate substance in order for the equipment used in the process to qualify as "alternative energy property." Such a change, which is not yet reflected in S. 750, would appear to be consistent with the intent of S. 750's §4(a)(4).

III. Section 4(f): Public Utility Property

The existing energy investment tax credits for "recycling property" and "alternative energy property" do not include property which is "public utility property" as defined by Section 46(f)(5) of the Internal Revenue Code. This definition provides that a facility is deemed to be a public utility if its rates for either the furnishing or sale of electricity or steam have been established or approved by a state or federal agency or public service commission. The present rules implementing the Public Utility Regulatory Policy Act of 1978, Pub. L. 95-617 (Nov. 9, 1978), provide that rates for the sale of electricity or steam by a "qualified cogeneration facility" are not subject to regulation by state regulatory authorities. 18 C.F.R. Part 292, 45 Fed. Reg. 12214 (Feb. 25, 1980); 45 Fed. Reg. 17959 (March 20, 1980).

Section 4(f) of S. 750 would make it clear to private investors that equipment used at a "qualified small power production facility" or a "qualified cogeneration facility" will qualify for the energy investment tax credits and will not be deemed "public utility property." Consequently, Mustang supports this aspect of S. 750.

IV. Section 2: Termination Date for Credit

Section 2 of S. 750 extends the energy investment tax credit available to "recycling equipment" and "alternative energy property" from December 31, 1982 to December 31, 1986. Mustang believes that in the case of recycling plants and industrial waste processing plants such a deadline may not be realistic. Due to extensive feasibility studies and long-term construction, the normal time span from conception to operation of a plant using recycling equipment is from 3 to 5 years. In addition, our experience has been that it takes anywhere from 6 months to one year to obtain a sufficient commitment to commence a feasibility study. The period of availability for the tax credits should be extended to December 31, 1990 to insure adequate participation in the program and to more realistically encourage construction of facilities using energy recovery systems.

Thank you, Mr. Chairman, and members of the subcommittee for giving me the opportunity to appear before you to express our views.

Senator WALLOP. Mr. Tuominen.

STATEMENT OF FLOYD TUOMINEN, REPRESENTING THE WASTE EQUIPMENT MANUFACTURERS INSTITUTE, NATIONAL SOLID WASTES MANAGEMENT ASSOCIATION, WASHINGTON, D.C.

Mr. TUOMINEN. Mr. Chairman and Senator Durenberger. My name is Floyd Tuominen, and I serve as deputy chairman of the Waste Manufacturers Institute of the National Solid Wastes Management Association. As well, I am the sales manager of Fiber Baler-Harris Division of the American Hoist & Derrick Co., St. Paul, Minn., one of the Nation's leading companies in manufacturing construction, energy, and recycling equipment used by the waste industry to process solid waste and recycle materials.

Our experience shows that the energy tax credit has been a positive incentive to small and large businesses to purchase equipment for recycling, additionally contributing to energy savings and waste stream reduction.

The National Solid Wastes Management Association, composed of more than 2,000 member waste-service and manufacturing firms, has actively supported a reasonable program for solid waste management. Companies providing resource recovery facilities and equipment and in recycled materials heartily endorse S. 750 and urge this committee to approve this useful legislation as quickly as possible. S. 750 increases the allowable energy tax credit to 20 percent and extends the eligibility period to December 31, 1986. Both actions encourage investment in solid waste-to-energy facilities, and in the materials recycling business. Additionally, it expands the definition of "recycling equipment" to include equipment normally used in recycling operations.

The primary thrust of the energy tax credit is to stimulate investment in materials and energy recovery to conserve energy. Recycling aluminum saves 90 percent of the energy, pound for pound. Other materials, while conserving energy on a smaller scale, are achieving successes where markets are established.

Waste-to-energy combustion facilities provide needed energy for local use. NSWMA advocates that real energy savings will be achieved if these forces are encouraged. In conclusion, NSWMA considers that there is a substantial justification for continuing and expanding the energy tax credit. The Resource Conservation Recovery Act of 1976 encourages resource recovery and recycling as one of its goals. We believe with using the economic pull of the tax system rather than the governmental push of grants and price support programs, the Federal Government can provide a neutral stimulus to the private sector to achieve increased rates of resource recovery and reuse without disrupting the discipline of the competitive marketplace.

Thank you for your time.

Senator WALLOP. Thank you, Mr. Tuominen.

[The prepared statement follows:]

SUMMARY OF
STATEMENT BEFORE THE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
OF THE
COMMITTEE ON FINANCE
U.S. SENATE
ON
INDUSTRIAL ENERGY SECURITY TAX INCENTIVES
S. 750

PRESENTED BY

Floyd Tuominen
Deputy Chairman, Waste Equipment Manufacturers Institute
NATIONAL SOLID WASTES MANAGEMENT ASSOCIATION

AND

Sales Manager, Fiber Baler-Harris Division, AMERICAN HOIST & DERRICK CO., INC.
St. Paul, Minnesota

October 19, 1981

1. Members of the NATIONAL SOLID WASTES MANAGEMENT ASSOCIATION: (a) Construct and operate resource recovery facilities which recover energy and materials from municipal solid wastes; (b) Manufacture machinery used by entrepreneurs, many whom are small businessmen, to recover and recycle materials from municipal solid waste; and (c) Collect and recycle materials contributing directly to waste reduction and energy savings.

2. S. 750 will increase the allowable energy tax credit to twenty percent and extend the eligibility period to December 31, 1986, both actions encouraging investment in solid waste-to-energy facilities and materials recycling businesses.

3. Experience of the members of the NATIONAL SOLID WASTES MANAGEMENT ASSOCIATION, in working with municipalities and bond financiers, illustrate the beneficial influence of energy tax credits in helping to attract investors to resource recovery projects.

4. Experience of members of the Waste Equipment Manufacturers Institute of NSWMA demonstrate the financial help provided to small businesses through energy tax credits for the purchase of recycling equipment.

Mr. Chairman and members of the Committee, my name is Floyd Tuominen and I serve as Deputy Chairman of the Waste Equipment Manufacturers Institute of the NATIONAL SOLID WASTES MANAGEMENT ASSOCIATION as well as Sales Manager, Fiber Baler-Harris Division of AMERICAN HOIST & DERRICK COMPANY in St. Paul, Minnesota, one of the nation's leading companies manufacturing construction, energy and recycling equipment used by the waste industry to process solid waste and recycle materials. My company supplies processing equipment used by the recycling industry throughout the U.S. and beyond, to recover aluminum, metals, paper and other materials from the waste stream. This equipment promotes energy savings through recycling of materials. Our experience shows that the energy tax credit has been a very positive incentive to small and large businesses to purchase equipment for recycling, additionally contributing to energy savings and waste stream reduction.

Other member companies of NSWMA likewise are engaged in providing facilities and in manufacturing equipment to recover energy and materials from municipal solid wastes. Still other companies are engaged in the collection of solid wastes and the physical separation and preparation of materials for recycling. Growth of these companies in the resource recovery and materials recycling industry has been coincident to implementation of the federal solid waste programs created by the Solid Waste Disposal Act as modified by the Resource Conservation and Recovery Act of 1976.

The NATIONAL SOLID WASTES MANAGEMENT ASSOCIATION, composed of more than 2,000 member waste service and manufacturing firms, the national voice of the waste management industry, has actively supported a responsible program for solid waste management. We have worked closely with members and staff of the Environment and Public Works Committee of the Senate and its counterpart on the other side, with the U.S. EPA and Department of Energy, and their state regulatory counterparts.

The companies involved in providing resource recovery facilities and equipment and in recycling materials heartily endorse S. 750 and urge this Committee to approve this useful legislation as quickly as possible. Specifically, we commend to your attention that portion of the bill which amends the amount of the energy tax credit by increasing the allowable credit from 10% to 20%; which extends the eligibility dates through December 31, 1986 for alternative energy property and recycling equipment; and which expands the definition of recycling equipment to include equipment normally used in recycling operations.

NSWMA estimates that over 60 major communities nation-wide are examining resource recovery facilities to solve their solid waste disposal problems. These proposed facilities include waste-to-energy combustion and materials processing/recovery systems. We project that at least 15 will either be under construction or in operation by 1986, having solved the economic equation. This pace, which is perhaps slower than the previous projections, will be the result of deliberate and considered risk taking/sharing by the community and the private sector. These communities are generally unable to fund projects with general obligation funds and must look towards revenue bonds to meet their needs. Energy tax credits and industrial development bonds are the two incentives municipalities have in today's market to attract private investment. Increasing the energy tax credit to 20% will significantly increase the private investment incentive.

We strongly support the long term intent of Congress to provide leadership and financial assistance in disposing of solid waste in an environmentally safe manner and at the same time recovering salvageable materials and energy.

Early attempts to promote resource recovery through federal assistance programs tended to distort the free market through grants, loan guarantees, and price support loans. We opposed these methods, viewing them as encouraging the spending of taxpayer dollars in direct competition with products and services offered by the private sector. We believe, and endorse, the direction being taken by S. 750 to stimulate private investment through tax credits. This method of federal financial participation tends to give needed solid waste disposal facilities which capitalize on energy recovery and materials recycling technologies the advantage they need in the competition to attract investors. Decisions by municipalities are based on economic considerations of the project. The federal participation is minimized and is appropriate.

The technology of resource recovery has gone through an important shake down phase and no longer represents the chief impediment to building these systems. However, the municipalities still face external disincentives which prevent free market forces from recommending investments in the various resource recovery projects. Let me cite a few examples.

We can report some substantial progress in one area: Authorizing municipalities to enter into long-term contracts which are necessary to procure these facilities (generally agreed to be most efficiently constructed and operated under terms of a full-service contract with a private waste management firm). As a result of the federal legislative push under the RCRA, many states have made this change in their basic statutes.

Another issue which is being appealed at this moment to the U.S. Supreme Court involves determination of a municipalities' rights and limitations to legislatively direct the flow of all waste to a particular resource recovery facility. The amount of waste requiring disposal is an essential ingredient in sizing any project. The problem of how the waste stream to a facility is guaranteed, currently a disincentive to investment in major resource recovery facilities, should be resolved when the case is finally settled.

A third external disincentive is found in the public subsidies available to competing fuels such as oil and natural gas. The Administration is taking steps to eliminate the public subsidies and, should this policy succeed, oil and gas will become more cost-competitive with solid waste as a fuel.

We believe the biggest external disincentive to investment in resource recovey facilities is one which is fully within the capacity of a responsible government to address. While we may complain about the environmental damage caused by "open dumps" and improperly managed solid waste landfills which cause pollution, we have not devoted the resource nor mustered the political willpower to close down these "open dumps" which offer the chief competiion to resouce recover facilities. These "open dumps" are unfair competitors when in a free marketplace alongside properly engineered sanitary landfills, balefills, and waste-to-energy systems. Enforcement of existing and adequate disposal standards in most states would have the twin salutory effects of eliminating these environmental threats and stimulating an economic climate condusive to implementing resource recovery. Federal leadership has accomplished many improvements in this area to date.

These external disincentives combine to frustrate the operation of a free market. Until these market imperfections are eliminated, it is unfair to expect the free and competitive marketplace in waste disposal to alone offer incentives sufficient to attract investment capital to build needed resource recovery systems.

It is appropriate and necessary that government provide off-setting inducements to investors in resource recovery facilities. These systems are generally the most expensive single investment which a municipality might make. Major plants generally cost over $100 million. While developers can now take advantage of the new accelerated cost recovery provisions of the Economic Recovery Act of 1981, the 10% energy tax credit remains as a special incentive to consider investments in resource recovery facilities. Clearly, a neutral stimulus such as the energy tax credit is required to overcome the external disincentives of the present imperfect marketplace.

The primary thrust of the energy tax credit is to stimulate investment in materials and energy recovery to conserve energy. Recycling aluminum saves 95% of the energy, pound for pound. Other materials recycling markets, while conserving energy on a smaller scale, are achieving successes where markets are established. Waste-to-energy combustion facilities provide needed energy sources for local use. NSWMA advocates that real energy savings will be achieved if these forces are encouraged.

Materials recyclers benefit from energy tax credits. Here, the tax credits encourage entrepreneurs to risk establishing and expanding existing business. This industry, while redirecting thousands of tons of secondary materials back into the markets rather than into landfills, has a long way to go as evidenced by the total amount of solid wastes being buried today. Extending the tax credit eligibility to 1986 for recycling enterprises will ensure continued progress. Redefininig recycling equipment simply recognizes the heavy outlays required for capital equipment to process solid waste.

We project that the number of entrees into the recycling business will increase in the future. This projection is based on the very positive and active interests in recycling equipment, markets, and operations expressed by many of our small business members and by statements from our manufacturer members who are providing this equipment. We do not want to see this effort diminished.

We believe that the cost to the federal Treasury of the energy tax credits (or even the expanded tax credit proposal) will not be as great as some fear. Taxable revenues will be generated as the project, stimulated by the tax credit succeeds. The Treasury will gain substantial corporate and personal income taxes and social security payments which would not have been generated without these incentives. The tax credit is a one time loss to the Treasury. However, if the project is successful the Treasury can expect to be collecting significant revenues back from the labor involved directly and indirectly both in the construction of the facility and in the operation of the facility throughout its life. We need a little "supply side" sensitivity among those making these calculations.

In conclusion, NSWMA considers that there is substantial justification for continuing and expanding the energy tax credit. The Resource Conservation and Recovery Act of 1976 established as the goal of federal solid waste management policy the encouragement of resource recovery and recycling. We believe that using the economic "pull" of the tax system rather than the government "push" of grants and price support programs, the federal government can provide a neutral stimulus to the private sector to achieve increased rates of resource recovery and reuse without disrupting the discipline of the competitive marketplace.

Senator WALLOP. Mr. Mighdoll.

STATEMENT OF M. J. MIGHDOLL, EXECUTIVE VICE PRESIDENT, NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES, ACCOMPANIED BY EDWARD L. MERRIGAN, COUNSEL, REPRESENTING NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES, WASHINGTON, D.C.

Mr. MIGHDOLL. Thank you, Mr. Chairman. The membership of the National Association of Recycling Industries, consisting of approximately 1,200 companies located throughout the United States which are engaged in either the collection, processing, or industrial utilization of recyclable metals, paper, textiles and rubber, strongly supports S. 750 to the extent it proposes to increase the existing recycling tax credit provided by the Energy Tax Act of 1978 from 10 to 20 percent.

Industrial recycling of these recyclable materials results in dramatic energy savings, as well as resource conservation and alleviation of severe solid waste disposal problems and spiraling disposal costs throughout the United States. Utilization of recyclable aluminum, copper, paper, and steel, in place of their virgin material counterparts, results in energy savings ranging from 60 to 95 percent of the industrial energy required to produce the same products.

It is thus imperative to the Nation's resource and energy conservation programs to maximize industrial recycling in the United States.

Historically, Congress has provided tax benefits in the form of depletion allowances and low capital gains tax rates to producers of virgin raw materials while it simultaneously failed to provide any tax incentive to competing industrial recyclers of the same basic raw materials. In 1978 Congress finally provided an extremely modest, tightly restricted 10-percent recycling tax credit to industrial recyclers; but shortly thereafter, it reduced the capital gains rate on competing virgin raw materials in two steps, from 32 percent to 20 percent. Now it has been unfairly suggested that the recently enacted recycling tax credit should be terminated.

S. 750 clearly comes at an appropriate time, to the extent it proposes to increase the recycling tax credit from 10 percent to 20 percent. In addition to the proposed increase from 10 percent to 20 percent, however, three of the changes in the existing recycling tax credit are imperative: One. The credit should be extended from the end of 1982 at least to the end of 1986. In reality, it should be made permanent, because the favorable tax benefits for virgin producers are permanent.

Two. The tax credit should be expanded to investments in recycling equipment throughout the steel industry. There is no justification whatsoever for the present provision, which makes the credit unavailable for the recycling equipment investments beyond the scrap processing stage in the case of iron and steel.

And, finally, three, the credit should apply to all recycling equipment investments, not merely to those where taxpayers can demonstrate the investment results in increased recycling. All aluminum, steel, copper, paper, and other recycling material operations result in both resource and energy conservation. Thus, they are all essential to the Nation's resource and energy conservation effort, and should all qualify equally for the credit.

Moreover, the tax benefits for competing virgin material producers are not similarly restricted. Thus, there is no sustainable justification for such an artificial restriction on the recycling credit.

Thank you, Mr. Chairman.

Senator WALLOP. Thank you, Mr. Mighdoll.

[The prepared statement follows:]

BEFORE THE
SENATE FINANCE COMMITTEE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
WASHINGTON, D. C.

HEARINGS ON S. 750 AND 1288

STATEMENT
OF
M. J. MIGHDOLL, EXECUTIVE VICE PRESIDENT
NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES, INC.

Mr. Chairman:

Thank you for scheduling this testimony today.

My name is M. J. Mighdoll. I am the Executive Vice President of the National Association of Recycling Industries, Inc. (NARI), whose offices are located at 330 Madison Avenue in New York City.

NARI appears before the Committee for two purposes:

1. To support S. 750, introduced by Senator Wallop and several other members of this Committee, to the extent it proposes to increase the recycling tax credit provided by the Energy Tax Act of 1978 from 10% to 20%.

2. To urge the Congress, in any event, to preserve, protect and necessarily expand the existing recycling tax credit to include investments in all iron and steel recycling equipment; and to remove the current unfair, debilitating restriction which makes the credit available only in cases where industrial recyclers can prove that their investments will result in increased recycling volumes.

These changes in existing law are vitally important in view of the action Congress took earlier this year again to reduce the already-low capital gains rate on profits derived from the production of competing virgin industrial raw materials.

NARI AND THE RECYLCING INDUSTRIES IT REPRESENTS

NARI's membership consists of approximately 1,200 member companies located throughout the United States, all of which are engaged in either the collection, processing or industrial utilization of recyclable metals, paper, textiles and rubber.

NARI's members include the relatively small recyclers who collect and process recyclable materials and the relatively large refineries that convert scrap into new copper; aluminum smelters that produce ingots for castings and other fabricated products; brass mills; smelters of lead and zinc; paper mills and paperboard manufacturers; textile mills and rubber tire manufacturers; and steel mills that recycle stainless steel into bright, new stainless products.

The recycling industry has historically supplied the nation with significant portions of its critical raw material supplies, and thus the utilization of recyclable materials has a profound impact on the American economy. If industrial utilization of recyclables did not exist at current levels, there would not be enough raw materials to meet national demand, costs of raw materials would soar, our primary resources would be rapidly depleted and the United States would be more reliant than it is now on undependable resource needs. Indeed, the Department of the Interior estimates that within the next two decades our nation will be dependent on overseas sources for more than half of almost all of its industrial metal requirements and this serious problem is currently the subject of emergency review by the Cabinet-level Task Force On Strategic Materials.

Industrial utilization of recyclable materials thus conserves our dwindling supplies of domestic virgin raw materials, and where recyclables are used in place of virgin imports, our nation's balance of payments position is substantially improved. In addition, of course, when the U. S. recycling industry exports portions of our abundant surplus supplies of recyclables, our balance of payments structure is again significantly improved.

INDUSTRIAL RECYCLING ALSO CONSERVES ENERGY, IMPROVES THE ENVIRONMENT AND ALLEVIATES THE SOLID WASTE DISPOSAL CRISIS CONFRONTING CITIES AND STATES THROUGHOUT THE UNITED STATES

Industrial recycling also results in dramatic energy savings. Several federal studies have established that utilization of recyclable materials in place of competing virgin counterpart materials reduces industrial energy consumption in key energy-consuming industries as follows:

Industries	Percentage Reductions In Energy Consumption Per Unit Of Production
Aluminum	95%
Copper	70%
Paper	60% to 70%
Steel	74%

Moreover, the industrial utilization of recyclables instead of virgin counterpart materials simultaneously substantially reduces water and air pollution, as well as the volumes of industrial water required to produce the same products.

Finally, industrial recycling provides significant relief to cities and states throughout the nation in their constant struggle against the "solid waste disposal crisis" and skyrocketing solid waste disposal costs.

FEDERAL TAX LAWS HAVE HISTORICALLY DISCRIMINATED AGAINST INDUSTRIAL RECYCLERS AND THE ONLY TAX INCENTIVE PROVIDED FOR RECYCLERS IS THE RECENT, EXTREMELY MODEST RECYCLING TAX CREDIT NOW BEFORE THIS COMMITTEE FOR CONSIDERATION

Numerous independent federal studies, including those published by the Comptroller General of the United States, EPA and the National Commission on Materials Policy, have repeatedly advised Congress that the federal tax laws seriously favor industrial utilization (and thus depletion) of virgin materials over competing recyclable material counterparts.

The latest available tax expenditure statistics establish that producers of virgin metals, minerals and paper manufacturing raw materials receive federal tax benefits in the form of depletion allowances and low capital gains treatment of profits which total approximately $800 million a year. Those statistics were prepared when the capital gains rate was still 32%. It has since been reduced, first to 26%, and just this year, to 20%. Currently, therefore, the federal tax benefits provided to virgin metals and paper producers undoubtedly exceed $1 billion per year.

As indicated, this favorable tax treatment of virgin metals and paper-producing raw materials has been in full force and effect for decades. On the other hand, until 1978, there was no federal tax incentive of any kind to encourage taxpayers to invest in new mills or equipment designed to utilize recyclables. It is not at all surprising, therefore, that taxpayers with a viable choice to make invested billions of dollars in new virgin-oriented mills and equipment and little or nothing in recycling-oriented mills and equipment. This trend, which is obviously continuing today as the federal law laws provide increasingly-favorable treatment to virgin producers, promises to have a serious adverse impact over the years on our nation's resource and energy conservation programs, and on the solid waste disposal problems and costs which face state and local governments almost everywhere. The seriousness of the problem in the metals and paper industries was emphasized by Chairman Wallop when he introduced S. 750. He stated in the Congressional Record for March 19, 1981, at page S2393:

> ". . . [I]ndustry represents nearly 40 percent of U. S. energy requirements, and industry is the fastest growing energy-consuming sector in the U. S. economy. Within the industrial sector, the major process industries such as steel, chemicals, aluminum, refining and paper account for 70 percent of industrial energy use. The intensity of energy use in the industrial sector, particularly in the major process industries, makes it possible to reap tremendous energy savings per dollar of investment capital. Energy efficiency investments in the industrial sector can provide the biggest bang for the buck of any conservation effort in the U. S. economy."

Based on this philosophy, which is irrefutably sound, Congress finally provided an extremely modest, extraordinarily-restricted Recycling Investment Tax Credit for industrial recyclers in the Energy Tax Act of 1978. That credit, equal to only an extra 10% of recycling equipment investments in solely those cases where investments would clearly result in increased recycling volumes, was estimated by Treasury and Joint Committee experts to be worth $28 million to recyclers in 1979; $30 million in 1980; $34 million in 1981; and perhaps $37 million in 1982, when the credit expires, unless reenacted.

Compared to the $800 million to $1 billion or more provided in federal tax benefits each year to competing producers of virgin metals and paper-making raw materials, the Recycling Tax Credit was patently a tiny concession to the clear, overwhelming need for a maximum, all-out industrial recycling effort in the 1980's.

Nevertheless, the new credit was a first, vitally important step forward — and considering the short time it has been in existence, our members report it has already served as an effective stimulant to increased industrial recycling in the United States, even during a period of general economic uncertainty and adversity.

THE NATION'S RESOURCE AND ENERGY CONSERVATION PROGRAMS AND SOLID WASTE DISPOSAL PROJECTS THROUGHOUT THE UNITED STATES WOULD SUFFER SEVERELY IF THE RECYCLING CREDIT WERE SUDDENLY TERMINATED NOW. CONVERSELY, INDUSTRIAL RECYCLING INVESTMENTS WOULD GROW AT A MUCH FASTER PACE IF THE CREDIT WERE INCREASED TO 20% AND BASELESS RESTRICTIONS ON ITS AVAILABILITY WERE REMOVED

As stated above, the new Recycling Tax Credit has been in full force for only three (3) years. Larger investments, based on its availability, are only now taking shape, and many are planned for 1982 and beyond which would have to be cancelled with disastrous results if the credit were suddenly terminated or not extended.

Also, as stated above, Congress has just expanded the already-favorable tax treatment of profits from competing virgin raw materials by reducing the capital gains rate, in two steps, from 32% to 20%.

Accordingly, S. 750 clearly comes an an appropriate time to the extent it proposes to increase the Recycling Tax Credit from 10% to 20%. If the United States is to reach its resource and energy conservation goals – and if industrial recycling is to reduce the crushing volumes and costs of solid waste disposal – the Recycling Tax Credit must be increased in order to prevent the vast majority of investment dollars from rushing headlong to the increasingly favorable tax atmosphere surrounding competing virgin raw material production investments only.

In addition to the proposed increase from 10% to 20%, however, three (3) other changes in the existing Recycling Tax Credit are imperative:

1. The credit should be extended from the end of 1982 at least to the end of 1986. In reality, it should be made permanent because the favorable tax benefits for virgin producers are "permanent" – i.e., they are not restricted to just a few years, and they have already been in force for decades.

2. The credit should be expanded to investments in

recycling equipment throughout the steel industry. There is no justification whatsoever for the present provision which makes the credit unavailable for recycling equipment investments beyond the scrap processing stage.

3. Finally, the credit should apply to all recycling equipment investments, not merely to those where taxpayers can demonstrate the investment will result in "increased recycling." All aluminum, steel, copper, paper and other recycling material operations result in both resource and energy conservation. Thus, they are all essential to the nation's resource and energy conservation effort, and they should all qualify equally for the credit. Moreover, the tax benefits for competing virgin material producers are not similarly restricted. Thus, there is no sustainable justification for such an artificial restriction on the recycling credit.

CONCLUSION

For the foregoing reasons, therefore, NARI favors S. 750 to the extent it proposes to increase the Recycling Tax Credit to 20%, and NARI urges the Committee favorably to report that proposal with the additional provisions about which I just testified.

Senator **Wallop**. Mr. Hershson.

STATEMENT OF MORRIS HERSHSON, PRESIDENT, NATIONAL BARREL AND DRUM ASSOCIATION, WASHINGTON, D.C.

Mr. **Hershson**. I am Morris Hershson, President of the National Barrel and Drum Association, Mr. Chairman. With me is Randolph Stayin of Taft, Stettinius & Hollister who is counsel to our association.

The members of our association are independent small business concerns located throughout the United States engaged in the business of reconditioning and recycling used steel drums so that they could be reused many times. The association had hoped that the reconditioning of these drums would be deemed "recycling of solid waste," for the purposes of the Energy Tax Credit Act under the 1978 law. However, while the Treasury Department agrees that used steel drums are "solid waste," they have limited the credit to processes which return the solid waste to raw materials, thus making the credit unavailable to our industry. This limitation on the definition of recycling undermines the very goal of the act by eliminating a tax incentive to a process that involves substantial energy and resource conservation.

The reconditioning of used steel drums is a classic example of recycling which reduces energy and conserves natural resources. The process is highly mechanized and involves the chemical decomposition of the wastes by their incineration, the shop blasting, dedenting, welding, relining the interior, repainting the exterior both with high-baked oven drying, curing and, finally, testing.

The energy conservation achieved by reconditioning is significant. Ten times more energy is needed to manufacture the steel and fabricate the steel drum than to recondition the used drum. One study by an economist from the University of Illinois concluded that if a switch were made to rely on reconditionable drums rather than a mix of short-lived and throwaway drums, a savings of more than 17 billion Btu's could be achieved annually. Moreover, the application of the tax credit to drum reconditioners will encourage purchase of newer, more energy-efficient equipment resulting in further conservation. Such equipment is now commercially available. It will, more importantly, encourage the expansion of present facilities, which is of importance to energy and resource conservation, fighting inflation, and the environment.

[The above named study is in the official committee files:]

Mr. **Hershson**. This reconditioning process is essential to the environment, since the drum reconditioner is a centralized collection agency of industrial residues that typically remain in drums after emptying. These residues are hazardous, toxic, and otherwise objectionable. We have received between 50 and 100 million gallons of this waste annually, which are collected by us and safely disposed of in accordance with environmental regulations and practices. It has been said that if we didn't exist, Government would have to invent us.

In addition, we conserve substantial tonnages of iron ore, coal, coke, oil, et cetera, which would be required to manufacture 45 million steel drums if we did not exist. We save enough steel to build 17 George Washington Bridges annually. We also serve a true economic function by reducing packaging costs; thus, aiding in the battle against inflation.

I have included in my prepared statement the exact language we suggest to include our industry, thus avoiding the interpretative problems as occurred with the 1978 act.

The revenue lost in extending the energy tax credi to our industry, which we estimate to be less than $2 million, is a small price to pay when viewed from the perspective of the significant energy and resource conservation that we can achieve.

We thank you, Mr. Chairman, for introducing S. 750, and we thank this committee for the opportunity to present our views to you.

Senator WALLOP. Thank you, Mr. Hershson.

[The prepared statement follows:]

STATEMENT OF MORRIS HERSHSON

NATIONAL BARREL AND DRUM ASSOCIATION

U.S. SENATE COMMITTEE ON FINANCE

OCTOBER 19, 1981

I am Morris Hershson, President of the National Barrel and Drum Association. With me is Randolph J. Stayin of Taft, Stettinius & Hollister, counsel to our Association. We want to thank Senator Wallop for his efforts in introducing S. 750 and we are happy to endorse this important energy conservation legislation. The members of the National Barrel and Drum Association are independent small businesses located throughout the United States which engage in the business of reconditioning used steel drums so that these drums can be reused many times. The reconditioning industry employs about 10,000 workers and last year handled over 45,000,000 drums. As an industry which achieves substantial energy conservation through the barrel and drum recycling process, we are keenly aware of the importance of the energy tax credit, particularly for recycling equipment. Our members carry out a critical function in energy and resource conservation, but reconditioning as an industry faces substantial market decline. The application of the energy tax credit to our industry will help stimulate and ensure the expansion of the public conservation benefits that flow from the reconditioners' service.

The Association had hoped that the reconditioning of used steel drums would be considered to be "recycling of solid waste" for purposes of the energy tax credit under the 1978 law. However, while the Treasury Department agrees that used drums are in fact solid waste, the regulations have limited the definition of recycling to processes which return solid waste to a raw material, thus making the tax credit unavailable to the drum reconditioning industry.

Despite the technicality which limits the coverage of the energy tax credit, there is no doubt that the reconditioning of used steel drums is a classic example of recycling which reduces energy consumption. The process is a complicated one: typically, users of steel drums (principally oil and chemical companies) bring or sell the used drums back to reconditioning plants where they are dedented, leaks are repaired, they are cleaned either by incinerating the chemical residue or applying caustic solutions and shot blasting, and then are tested, lined, and repainted.

The drum reconditioning industry had its real growth during a period of national awareness of the dangers of squandering our energy and natural resources. During

World War II, and the Korean War, the War Production Board and the National Production Authority issued rules that made it impossible to buy new drums unless the user had made every effort to use already manufactured drums until their useful life had been exhausted. Only then could he buy new drums.

Recently, the steel drum manufacturing industry has moved into the production of lighter gage steel drums that have limited reuse capability. As the use of lighter, short-lived drums has increased, the threat to the reconditioning industry has grown. If the trend continues, the inventory of reusable drums may drop below a point that will permit the reconditioning industry to survive. With the industry at a critical threshold, Congress must act to encourage development rather than decline in the conservation process that reconditioners engage in.

The limitation under the current law is indeed unfortunate. The energy tax credit was originally designed to provide an incentive for investments in property intended to reduce the amounts of energy consumed in industrial processes, a laudable goal. The limitation on the definition of recycling undermines this goal by eliminating a tax incentive for a process that involves substantial energy conservation.

Ten times more energy is needed to manufacture the steel and fabricate a new drum than to recondition a used drum. The eighteen gage resuable drum can also be compared to the lighter, short-lived drum on the basis of the total energy needed to achieve the same number of fills. Viewed from this perspective, the eighteen gage drum requires at least 27% less system energy, that is the total energy from mining to scrap, for the same number of fills. One study, by economists at the University of Illinois, concluded that if a switch were made to a sytem relying solely on reconditioning drums (as opposed to a mix of reusable and single use drums), a savings of at least 17,043 billion B.T.U.s could be achieved. In equivalent terms, this much energy would provide enough electrical energy for a city the size of San Francisco for one month; it would light the U.S. Capitol building for 390 years. A copy of the study is attached to this testimony, and I request that it be be made a part of the record. Clearly the reconditioning industry provides a significant contribution to our energy conservation program, and there is the potential for a significant increase in that contribution.

The application of the energy tax credit to the drum reconditioning industry will encourage an expansion in the recycling efforts of firms that currently engage in the drum reconditioning business. Moreoever, the tax credit will encourage companies now in the business to purchase newer, more energy efficient equipment, resulting in further conservation. Such equipment is in fact commercially available. We estimate that investment in the newer equipment would result in an energy savings of 15% to 20% over the equipment which is currently in general use.

In addition to the energy conservation which results from the reconditioning of used steel drums, there is also significant conservation of other critical resources. For example, in quantitative terms, drum reconditioning annually saves one million tons of steel, enough steel to build 17 George Washington Bridges every year. The industry is also beneficial to the environment since the drum reconditioner is a centralized collector of the industrial residues that typically remain in the drum after use. The industry as a whole receives between 50 and 100 million gallons of hazardous and other wastes each year. These waste residues and sludge deposits are collected and safely disposed of in accordance with developing environmental practices.

The concept of an energy tax credit to encourage conservation measures is an important part of our nation's energy program. The service of the drum reconditioning industry, which was not covered under the 1978 Act, results in substantial savings of energy and other resource conservation. While it appears that S. 750 would achieve the expansion of the energy credit to cover the activities of the drum reconditioning industry, we believe that the industry's services are so important that they should be covered specifically in the statute in order to avoid problems with interpretation later such as those which occurred in connection with the 1978 Act. We would, therefore, suggest that Section 48(1)(6)(A) of the Internal Revenue Code be amended by the bill (with the addition of the underscored language) to read as follows:

(A) In General. -- The term "recycling equipment" means any property which is used exclusively--

(i) for the unloading, transfer, storage, reclaiming from such storage, sorting, and preparation (including, but not limited to, washing, crushing, drying, and weighing) of solid waste, or

(ii) for the reconditioning of used steel drums, or

(iii) in the recycling of solid waste.

In summary, I hope that I have been able to demonstrate the importance of expanding the coverage of the energy tax credit, through S. 750, to include the process of reconditioning steel drums. The revenue loss from extending the tax credit to our industry, which we estimate to be no more than two million dollars, is a small price to pay when viewed from the perspective of the significant energy and resource conservation that we can achieve.

Thank you Mr. Chairman and members of the Committee.

Senator Wallop. Senator Durenberger.

Senator Durenberger. I like what Mr. Hershson just said about Government would have to "invent us." It reminded me of a condemnation case I once handled right down near American Hoist for the original recycler in St. Paul and Minneapolis, who had a couple of trucks running around the whole community picking up all the throwaway everything and recycling it, in effect, into pallets, and breaking off the copper, and reselling it, and so forth. By gosh, the good old city, at that time, was in the business or trying to put him out of business because he created smoke and hazards, and things like that.

But in my first 2 years in the Senate, I spent an awful lot of time trying to invent resource-recovery projects with DOE grants and loan guarantees, and all that sort of thing. I guess my question, particularly to the first couple of witnesses who are one way or another associated with the energy and resource-recovery business, is: To what degree are the suggestions that you make relative to this bill: the extension of the credit, the expansion of the definitions of solid waste recycling equipment, alternative energy equipment, and so forth, to what degree is that the principal stimulus that is necessary to expand the market, if you will, for energy and resource recovery in this country?

Mr. Thomas. We really don't feel that it is necessary for expansion of the market, other than in reviewing S. 750. In your reference to the IRS sections, we have found that there was a definite need for further clarification for industries, especially the resource recovery industry, involved in the utilization of waste, to be able to determine whether or not certain equipment: Recycling equipment, alternative equipment, or the waste that they are going to use, does in fact qualify for the investment tax credits that you are proposing.

Mr. Tuominen. I might just comment very briefly on it that it is because of the cost of the projects. Many projects are running over the $100 million level. And if we are going to have private funds finance this, we need to have the incentive for the buyer of the bonds, and so on, and be able to have these credits available to them also, in some way or manner.

Senator Durenberger. I like the comment that Mr. Thomas made about getting municipalities out of the capital market and letting the private investor in. And if this is one of those moves that is needed to do that, I think that is certainly worthwhile.

Mr. Thomas. It certainly is. Our involvement so far has been primarily with the municipalities, and we have run into some very serious problems with some of our projects from the standpoint of financing by the municipalities. The financing requirements go beyond the extent of their debt limitations. The private sector is ready to move, but we need some help.

Senator Wallop. I must say that I don't know how familiar you are with Mustang. They have pretty ingenious devices in their bag. At least, they impressed me, and I hope that some of them can come to fruition.

I thank you all, gentlemen. We are running a little late. It is not a lack of interest that I have no further questions. We will be back at you on your testimony and each of them will be included in the record in their entirety.

With the permission of the next two panels, we will combine them. I think it will save time—theirs and ours.

Mr. Michael J. Zimmer, Washington Counsel for the Cogeneration Coalition; Mr. David Ludvigston, senior counsel, Pacific Gas & Electric Co.; and Mr. Richard B. Stanger, attorney for Nossaman, Krueger & Marsh; Mr. Don. W. Wilson, assistant director, Renewable Energy Institute.

Gentlemen, if you would, come forward.

STATEMENT OF MICHAEL J. ZIMMER, WASHINGTON COUNSEL, COGENERATION COALITION, INC., WASHINGTON D.C.

Mr. **Zimmer**. Thank you, Mr. Chairman. I am here this morning as a member of the law firm of Wickwire, Gavin & Gibbs, P.L. representing the Cogeneration Coalition, Inc., the coalition is an ad hoc group of companies from the gas utility, industrial user, equipment manufacturing, and engineering consulting communities. These companies share mutual interests in the promotion of cogeneration development nationwide.

For purposes of summarizing our statement this morning, I would like to make three general points, and then emphasize some specific considerations for the committee's review.

The first point is the importance of providing certainty and stability through this committee's actions in light of recent administration pronouncements regarding the business energy tax credit program. It is important that companies wishing to make business decisions based upon this program know with certainty whether they will qualify for tax incentives and relief provided.

Second, it is very important that such companies not be subject to the arbitrary whims of the Treasury Department, in terms of efforts undertaken by Treasury to scale back the intentions of the Congress through its implementing regulations. In that regard, we would strongly suggest the committee and staff consider that the legislative history of this act be extremely detailed, providing as much specific guidance as possible, and almost serving in the capacity as perhaps "surrogate regulations." This could bypass problems associated with implementation delays and shifts in interpretation of congressional intent by the Treasury Department.

Third, revenue loss should certainly not be an inordinate absolute value guiding this committee's deliberations on this program. There are important offsetting feedback effects from reduced deductions as ordinary and necessary business expenses, and positive business activity associated with delivering energy efficiency services. These types of feedbacks do occur as we have seen since 1978, for instance, in the area of capital gains taxes and changes that were made in the capital gains provisions of the Internal Revenue Code.

Specifically, in terms of the cogeneration tax credit provisions of the Internal Revenue Code, there are special factors that should be of serious concern to this committee. Cogeneration does represent one of the primary near-term efficiency improvement opportunities in the use of energy. Second, it promotes substantial oil savings capabilities as well as other natural gas savings opportunities on a national basis. Third, it is one of the first energy tax credits scheduled to expire on December 31, 1982. And, fourth, there has been an increasing awareness and growing interest in cogeneration development by industry. The cogeneration tax credit and the availability of that assistance serves an important purpose in business planning for the development of these projects.

We thank you for the opportunity to appear here today, and we will be glad to provide any further assistance that the committee would find useful.

Senator WALLOP. Thank you, Mr. Zimmer.

[The prepared statement follows:]

STATEMENT OF THE COGENERATION COALITION, INC.

Introduction

The Cogeneration Coalition, Inc. ("Coalition") is a non-profit organization comprised of interested gas utilities, industrial users, industrial equipment manufacturers, and engineering consulting firms.[*] The Coalition has also established advisory relationships with other public interest and trade association groups on cogeneration and other energy efficiency issues. The Coalition has supported since 1980 the provision of necessary financial and tax incentives to promote the utilization of cogeneration resources and the removal of unnecessarily restrictive federal barriers to the development of potential cogeneration resources nationwide.

The Coalition views with alarm any attempt at present to rescind or discontinue the energy tax credit provisions of the Internal Revenue Code, particularly in view of the diminishing cash resources, financing options, and high interest rates facing energy users investing in these energy efficiency improvements since 1978.

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[*] The current members of the Cogeneration Coalition, Inc. include: Kimberly Clark Corp., Brooklyn Union Gas Company, H.O. Penn Machinery Co., National Urban Energy Corp., Daverman & Associates, Roy Weston, Inc., Catalytic Engineering, Inc., Entek Research, Inc., and Williams & Works.

The Cogeneration Tax Credit Should Be Continued

Energy efficiency is clearly receiving a lower priority than energy supply incentives under the Reagan energy and tax programs. Fuel use restrictions have been replaced by policies promoting free choice, oil regulation replaced by decontrol, mandatory conservation displaced by market forces and prices, coupled with tax provisions such as the Accelerated Cost Recovery System for promoting business productivity investments and national economic recovery. The national energy policy debate has also shifted from intense evaluation of international considerations to U.S. budgetary concerns. The Coalition believes that the present business energy tax credits not only contribute to the overall national objective of lowering oil imports and stimulating national economic recovery but present some sound and pursuasive arguments for continuation that will satisfy even the most conservative budgetary proposals presently under scrutiny.

For instance, the Windfall Profits Tax Act of 1980 ("Act") (P.L. 96-223), which provides for the establishment of an energy investment tax credit for cogeneration equipment in the amount of 10% beginning January 1, 1980 through December 31, 1982, is presently being challenged. To qualify for this tax credit, the equipment must be installed at an industrial or commercial facility in existence by 1980. There are further qualifications: the system cannot use oil or natural gas or any of their products as a primary fuel; if such fuels are used for startup, backup, or flame stabilization purposes, they cannot exceed 20% of fuel consumption by the system. Nor does equipment that merely increases a system's capacity to generate a primary energy product qualify under the Act. (See Attachment 1)

There is no point in dwelling on the current energy crisis facing our nation today. Our dependence on foreign oil coupled with the increasing instability in the Middle East is a constant reminder of our permanent window of vulnerability. Increasing energy efficiency is viewed by many as one of the effective, inexpensive, environmentally sound and permanent methods of offsetting oil dependency and reducing international vulnerability during the upcoming decade.

Thus, short-term stimulation of energy conservation is desirable. Experience with investment tax credits since initial passage in 1962 has shown this approach to be effective in stimulating desirable capital investment. In House Report No. 95-1445 the House Ways and Means Committee stated "investments have increased when the credit has been made available and decreased when the credit was rescinded". [*/]

As previously noted by the National Association of Manufacturers before this Committee (Id. at 65):

[*/] Industrial Energy Efficiency and Fuel Conversion Tax Incentive Act; Hearing before the Subcommittee on Taxation and Debt Management Generally of the Senate Committee on Finance, 96th Cong., 2d Sess. 65 (1980).

> "Capital expenditures increased in the years following the original enactment in 1962 and again picked up after restoration of the credit in 1971 in the years following when the ITC was raised to the 10% level"

While the regulatory components of the Reagan energy strategy are sound, the economic and tax provisions may not do the crucial job of promoting gains in energy efficiency. The energy users with the greatest incentive to conserve the use of oil, natural gas and electricity are also the very same companies and users with limited capital resources to take full advantage of readily available energy-efficiency technologies. Recent analysis has illustrated sharpening pressures on pretax profits caused by escalating fuel and power costs from 17.1% of pretax profits in 1966 to 39.5% of pretax profits in 1978. (See Attachment 2)

Since budgetary considerations are paramount, it must be emphasized that at the time an investment is made by a facility which qualifies under the legislation before this Subcommittee, there is no assurance that the investment will be made because of other considerations of an economic, technological, regulatory and design nature. Only after the investment is made, energy savings measured, and the reduction, if any, computed is the amount of the tax credit ascertainable under the provisions of S. 750.

There have also been discussions about "gold plating"--that is, deliberately increasing the cost of an energy efficiency investment merely to qualify for an energy tax credit.

This discussion ignores the economic and operational realities which can effectively preclude such approaches for sound economic, technical and engineering reasons. Such abstract and theoretical arguments do not offer constructive contributions to the continuing policy debate on promoting energy efficiency.

There are also those who argue tax credits precipitate premature replacement of old equipment. First, capital outlays for new equipment will not be solely contemplated on the availability of a tax credit. Higher energy costs, technical considerations, increased productivity, and other factors are additional incentives to purchase more efficient equipment. Second, these purchases fit neatly into the Reagan Economic Recovery Program, pumping more money into the economy, creating more jobs, new businesses, and desirable economic growth. Third, the tax credit itself may not per se guarantee capital intensive outlays on the part of industry but could be a definite quantum in the overall decision-making process. There may be old and marginal, but still quite operative facilities, that a tax credit incentive could possibly promote replacement investments with modern energy efficient devices.

In other words, a tax credit is not a substitute for sound and responsible business judgment. In a basic commodity industry that requires high investment for a historically low rate of return, the additional tax incentives provided would clearly help stimulate timely capital investments. Such investment in energy efficiency technology would save significant amounts of energy in the long term and dampen the inflationary effects of rising energy costs.

With respect to concerns voiced by the Treasury Department, in contrast to some tax incentives, the business energy investment tax credit offers opportunities to increase tax revenues within a relatively brief time. Tax credits are tied to actual energy savings in S.750. Energy expenses are deductible expenses under Section 162 of the Internal Revenue Code as "ordinary and necessary" business expenses. Reduced energy costs have the potential to reduce tax deductions in deriving taxable income with positive feedback effects offsetting revenue losses from the tax credits themselves. Further, the increased economic activity associated with the enhancement of energy efficiency generates additional taxable income with further positive feedback effects. This means that for every dollar of energy use saved by the investment, the Treasury in effect recovers increased tax revenues--revenue which would not have been collected but for the energy saving capital expenditure.

The Cogeneration Tax Credit Should Be Improved

The tax credit for cogeneration investments expires on December 31, 1982. It is not only the position of the Coalition that this credit should be extended, it is also our position that the tax credit should be amended to promote a comprehensive scheme for the short and mid-term development of cogeneration as a matter of national energy and tax policy. The current business energy investment tax credit for cogeneration equipment is too restrictive, and fails to recognize that in the short term cogeneration investments where applicable offer the greatest promise for increased energy savings compared with other energy efficiency technologies. Cogeneration equipment to qualify under current law must be installed in connection with a boiler or burner at an existing facility and must result in an expansion in the facility's cogeneration capacity. The annual use of an oil or natural gas fuel in the systems must be less than 20% of all fuel used each year and must be limited to use as a startup, backup or flame stabilization fuel.

It is our position that the cogeneration tax credit should be amended and extended to December 31, 1986 to include the following:

A. Modify the definition of cogeneration equipment to ensure that mechanical cogeneration qualifies for this tax credit, as well as cogeneration equipment that uses energy sources such as solar, biomass and geothermal energy.

B. Make the business energy tax credit available for cogeneration equipment intalled in new facilities as well as modification or retrofit of existing facilities. New facilities are generally better-suited to cogeneration than the retrofitting of existing facilities since such facilities can be constructed from the outset to avoid numerous technical problems which are faced in the modification and retrofit of existing facilities.

C. Make the business energy tax credit for cogeneration equipment available for the total costs of the cogeneration system installed. The current business energy tax credit for cogeneration is limited to equipment which increases a system's capacity to produce electricity or useful energy, whichever is the secondary energy output of the system. Specifically, the credit should also be available for any pollution control equipment or loading and handling equipment required in connection with the cogeneration facility. This would recognize major concerns which exist that environmental restrictions can be a significant impediment to the development of cogeneration projects.

D. Ensure that the business energy tax credit for cogeneration equipment is available for oil and gas-fired equipment installed in a cogeneration facility. Omitting oil and gas or any of their products as primary fuel is counterproductive since the most effective and currently available cogeneration technologies are oil or gas-fired. Current resitrictions on use of oil and gas in cogeneration facilities in order to qualify for available federal tax incentives must be reexamined to evaluate that only large-sized cogeneration facilities possess the economies of scale and capital requirements to utilize coal. Furthermore, in many cases, the only reasonable and available fuel choice in the interim is oil and gas for small and medium-sized cogeneration facilities. Use of oil and gas in a cogeneration facility offers increased efficiencies in use of these fuel inputs over use of such fuels in separate facilities. Also, the use of oil and gas in the interim can provide an important bridge or transition to synthetic fuels derived from wood, lignite, etc., for the long-term in cogeneration facilities.

E. Remove the current exclusion against public utilities qualifying for the business energy tax credit for cogeneration equipment, which is characterized as public utility property.

F. Require the Department of Treasury to promulgate proposed regulations to implement these modifications within 90 days after the date of enactment.

Some of the legislation currently before this Subcommittee considers these recommendations in part particularly in provisions of S.750. One of our major concerns regarding S.1288 is its failure to include cogeneration systems as qualifying equipment for its tax credit provisions. This ignores substantial opportunities for cogeneration investments in such commercial applications as schools, hospitals, prisons, shopping centers, and multi-family complexes.

Conclusion

We appreciate the opportunity to appear before this Subcommittee and will be pleased to answer any questions you may have. We also wish to thank the Subcommittee for scheduling these important hearings at this time as critical decisions on the future of the business energy tax credits are evolving within the Administration.

[illegible] COGENERATION

Because it conserves energy. Schematic D illustrates the extent to which cogeneration can improve efficiency using energy otherwise lost to condensation in conventional power generation.

Most electric utilities use the energy from their steam boilers for electric generation only. They reject two-thirds of the available energy in the form of heat to the environment. Many of the utilities' industrial and commercial customers, on the other hand, must generate heat in low pressure boilers for their process needs. Cogeneration brings the two processes together to produce energy savings.

Electric utility companies use, on an average, 10,000 British thermal units (Btu) of heat from fossil fuel to generate one kilowatt-hour (kwh) of electricity by the conventional route of using fired boilers and condensing steam turbines. Since a kilowatt-hour of electricity will produce only 3,413 Btu, the calculated thermal efficiency of electrical generation by that route is nearly 35 percent.[1] If cogeneration is practiced, the energy needed to generate that one kilowatt-hour of electricity will range from 4,000 to 7,000 Btu, depending on the system used. Generation efficiency can thus be as high as 84 percent. The energy not used for electric generation in such a cogeneration system is used for process or space heating purposes. A similar increase in efficiency applies if only mechanical work and heat are produced without generation of electric power.

This real efficiency increase attained by combining process or space heating with electric generation or mechanical work can conserve major amounts of energy. One recent study[2] concludes that, while very little energy can be saved economically by retrofitting existing facilities, by 1985 energy savings equivalent to 250,000 to 420,000 barrels of oil per day can be economically saved in new facilities, and as time goes on this potential increases.

Such energy savings also translate into direct benefits to the environment. Burning less fuel for heat and power results in fewer emissions of combustion products and waste heat, and the quality of our air and water benefits significantly.

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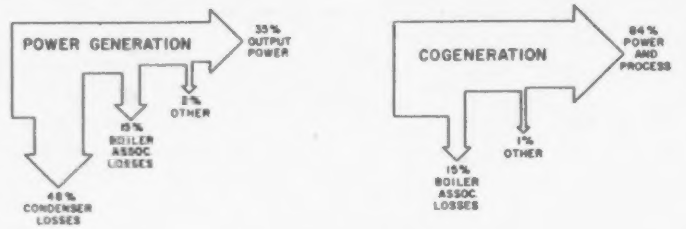
[1] If a manufacturing plant generates its own steam for process use, the combined efficiency of purchased electricity and plant steam would be about 64%.

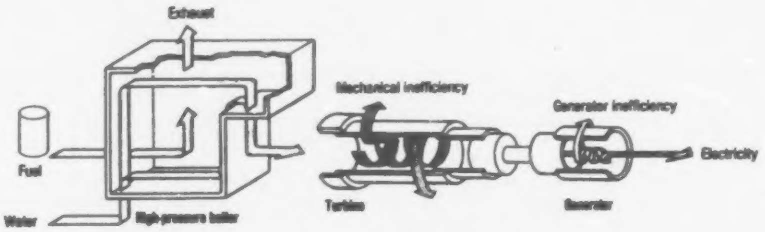
[2] *The Potential for Cogeneration in Six Major Industries by 1985*, prepared by Resource Planning Associates, Inc.



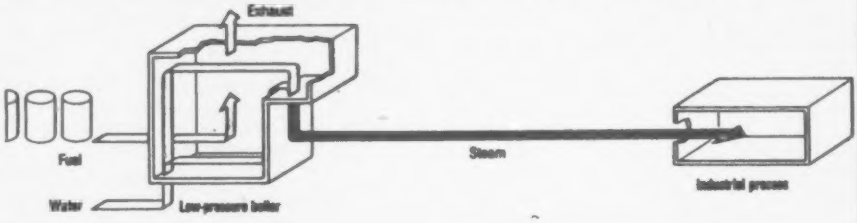
SCHEMATIC D

Figure 1-1
CONVENTIONAL ELECTRICAL AND PROCESS STEAM SYSTEMS
COMPARED TO A COGENERATION SYSTEM

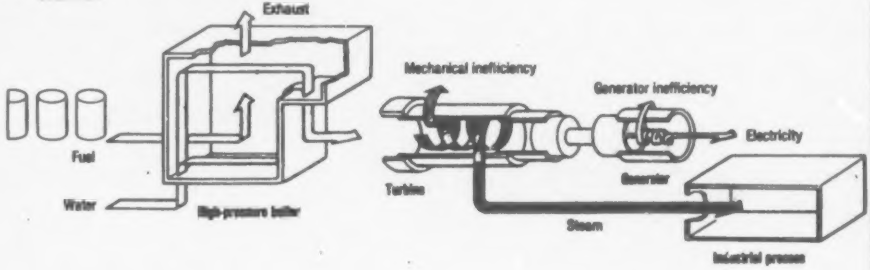
[A] Conventional electrical-generating system requires the equivalent of 1 barrel of oil to produce 600 kWh electricity.


Exhaust
Mechanical inefficiency
Generator inefficiency
Fuel
Electricity
Turbine
Generator
Water
High-pressure boiler

[B] Conventional process-steam system requires the equivalent of 2¼ barrels of oil to produce 8,500 lbs of process steam.

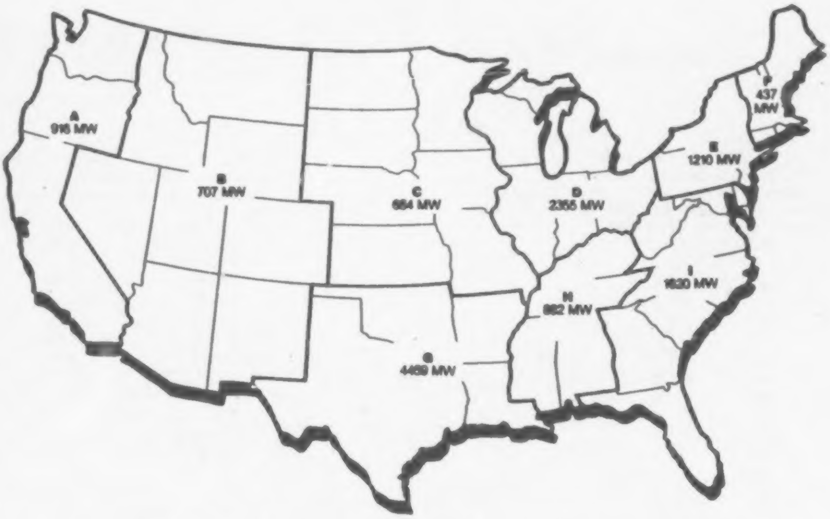

Exhaust
Fuel
Steam
Industrial process
Water
Low-pressure boiler

[C] Cogeneration system requires the equivalent of 2¼ barrels of oil to generate the same amount of energy as systems A and B.


Exhaust
Mechanical inefficiency
Generator inefficiency
Electricity
Fuel
Generator
Turbine
Water
High-pressure boiler
Steam
Industrial process

Source: Department of Energy-Resource Planning Associates, Inc. Cogeneration: Technical Concepts Trends Prospects, Sept. 1978

U.S. COGENERATION CAPACITY (MW)*


A
916 MW
B
707 MW
C
684 MW
D
2355 MW
E
1210 MW
F
437
MW
G
4459 MW
H
882 MW
I
1620 MW

Geographic Area	Food Products	Pulp and Paper	Chemicals	Petroleum Refining	Stone, Clay, and Glass	Primary Metals	All Other
A	94	238	184	0	15	0	385
B	18	31	186	9	0	451	32
C	35	83	135	21	0	0	410
D	59	406	292	44	76	1100	378
E	18	204	211	60	0	653	64
F	7	165	0	0	3	0	262
G	0	754	1031	656	37	1644	337
H	1	507	181	53	0	102	38
I	26	1028	93	183	2	140	148

*Data obtained from EPRI survey.

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Fuel and Power Costs Compared With Pre-Tax Profits

Based largely on the Annual Surveys of Manufactures and a forthcoming volume of revised national income data for 1929 to 1978, here is the cost of purchased fuel and power stated as a proportion of pretax profits:

1978	30.5%
1977	30.9%
1976	37.2%
1975	40.3%
1974	32.9%
1973	24.5%
1972	26.8%
1971	28.6%
1970	31.0%
1969	21.7%
1968	19.0%
1967	19.6%
1966	17.1%
1965	17.5%
1964	20.6%
1963	21.8%
1962	23.7%
1961	25.4%
1960	24.2%
1959	20.9%
1958	25.9%

For types of manufacturing, before and after the 1973 watershed, data limitations require that 1978 be compared with 1967. Here is 1978 energy spending as a proportion of pretax profits.

Primary metals	217.6 %
Glass, brick	113.5 %
Paper	82.8%
Textiles	70.1%
Rubber, plastics	69.1%
Chemicals	62.6%
Food	30.4%
Furniture	27.0%
Wood products	26.6%
Metal products	25.1%
Elec., electronics	21.9%
Clothing	17.3%
Petroleum, coal	16.7%
Miscellaneous	15.2%
Nonelec. mach'ry	14.7%
Motor vehicles	14.3%
Leather	14.2%
Instruments	11.9%
Publications	10.6%
Cigarettes	4.0%

Eleven years earlier (the needed 1966 breakouts aren't available), the same ratios looked like this:

Primary metals	50.0%
Glass, brick	76.6%
Paper	45.1%
Textiles	31.0%
Rubber, plastics	24.5%
Chemicals	27.4%
Food	21.2%
Furniture	14.0%
Wood products	29.4%
Metal products	14.2%
Elec., electronics	9.7%
Clothing	12.5%
Petroleum, coal	11.8%
Miscellaneous	21.9%
Nonelec. mach'ry	8.2%
Motor vehicles	7.2%
Leather	12.4%
Instruments	3.9%
Publications	7.2%
Cigarettes	2.1%

Source: ENERGY USER NEWS
September 14, 1981

Senator WALLOP. Mr. Ludvigson.

STATEMENT OF DAVID LUDVIGSON, SENIOR COUNSEL, PACIFIC GAS AND ELECTRIC CO., SAN FRANCISCO, CALIF., REPRESENTING THE EDISON ELECTRIC INSTITUTE, WASHINGTON, D.C., ACCOMPANIED BY DAVID OWENS, DIRECTOR OF RATE REGULATION AT EEI

Mr. LUDVIGSON. Thank you, Mr. Chairman. My name is David Ludvigson, and I am with the Pacific Gas and Electric Co. in San Francisco. Although I live in San Francisco these days, I was born in Minnesota and raised in Iowa. I don't care where they play, Iowa is going to beat Minnesota. [Laughter.]

I am speaking today on behalf of the Edison Electric Institute, which I shall refer to as "EEI." To my right is Mr. David Owens, who is the director of rate regulation at EEI.

EEI supports the goals of Senate bill 750 to increase the efficiency of our Nation's energy use and reduce our reliance on scarce and imported fossil fuels. In particular, EEI believes that cogeneration and small power production—and many times, for convenience sake, I will refer to both of them as "cogeneration"—has a potentially important and beneficial role in our Nation's energy future.

We support cogeneration as a means of facilitating this Nation's transition from an energy economy based on cheap abundant supplies of oil and natural gas to an era where the use of scarce and imported fuels is restrained and increasing use is made of energy conservation. The Energy Tax Act of 1978 and the Crude Oil Windfall Profit Tax of 1980 provide special tax credit incentives to promote the development of cogeneration.

EEI believes that amendments to the Energy Tax Act should fine tune existing tax incentives to promote the efficient deployment of cogeneration technology to meet our national energy goals.

I would like to make four major points on Senate bill 750. The first is that any special tax incentives offered for cogeneration and small power production should be applied equally to utility and nonutility owned facilities. Utilities should be allowed equal, competitive opportunities for the development of cogeneration The distinction between public utility property and other types of property eligible for investment tax credits is one which is not grounded in sound public policy. In realizing the objective of optimum development of new sources of cogeneration and small power production, electric utilities are certainly as well qualified as any other entities to do so on a basis equitable to consumers.

Section 4(f) of S. 750 appears to allow utilities to receive energy tax credit benefits to the extent they own an interest in a PURPA qualifying facility. However, PURPA, as you realize, limits the ownership of qualifying by utilities by 50 percent.

We would call your attention to Senate bill 1517, introduced by Senator Matsunaga, which amends the Internal Revenue Code to permit utilities to receive the energy tax credits for solar, wind, geothermal, or ocean thermal energy property. We support the adoption of this legislation modified to include cogeneration property, for the consideration of this committee.

The existing 10-percent energy tax credit should not be increased. An additional energy tax credit is not necessary, given the current incentives which exist for cogeneration. Cogeneration should be allowed to compete with other energy technologies based on energy and economic savings.

The third point is that the definition of associated cogeneration properties should be clarified so as not to construe ETC availability to nonenergy related investments.

Finally, Congress should not provide energy tax credit incentives to oil- and gas-fired generation unless there are demonstrable oil and gas savings over the lifetime of the cogeneration facility on a regional or a systemwide basis. Showing of oil and gas savings at the plant or process level, alone, is not sufficient.

That concludes my remarks.

Senator WALLOP. Thank you, Mr. Ludvigson.

[The prepared statement follows:]

STATEMENT BY EDISON ELECTRIC INSTITUTE

COMMENTS ON THE INDUSTRIAL ENERGY SECURITY TAX INCENTIVES ACT OF 1981

Presented by

David Ludvigson
Senior Counsel
Pacific Gas & Electric Company
San Francisco, California

and

David Owens
Director - Rate Regulation
Edison Electric Institute
Washington, DC

BEFORE THE SENATE FINANCE
SUBCOMMITTEE ON ENERGY &
AGRICULTURAL TAXATION

October 19, 1981

EDISON ELECTRIC INSTITUTE COMMENTS ON THE INDUSTRIAL ENERGY SECURITY TAX INCENTIVES ACT OF 1981

Introduction

Mr. Chairman and members of the Committee, I appreciate the opportunity to appear before you to discuss legislation regarding tax incentives for industrial and commercial energy production and management investments. I am David Ludvigson, Senior Counsel for Pacific Gas & Electric Company. In addition, I serve as a member of the Edison Electric Institute (EEI) Issue Group on Cogeneration and Small Power Production which is a group of electric utility representatives formed to monitor legislative and regulatory developments in cogeneration and small power production. I am presenting testimony today on behalf of EEI. David Owens, Director of Rate Regulation for EEI is accompanying me.

My comments today will focus on tax incentives provided for industrial cogeneration in Senate Bill 750. We have reviewed S.1288, the "Commercial Business Energy Tax Credit Act of 1981" and generally support the encouragement of greater energy conservation on the part of commercial business. We have no specific comments on that bill at this time.

EEI supports the encouragement of cogeneration as a means of industrial energy conservation wherever it will reduce the nation's dependence on oil and natural gas. We believe that what is required at the present time is fine tuning of the incentive legislation which has been enacted over the past several years to encourage cogeneration development. A general overview of EEI's positions with respect to the proper legislative encouragement of cogeneration were outlined.

in testimony presented last April by Ralph Mitchell, Vice President of Arkansas Power & Light before the House Subcommittee on Energy Conservation and Power, which is appended to this testimony.

There are three issues critical to the electric utility industry within the Industrial Energy Security Tax Incentives Act of 1981. First is the issue of whether the extension and provision of additional tax incentives are necessary to promote the efficient development of cogeneration. Second is the question of whether it is the proper role of the Congress to promote through tax incentives the development of oil and gas cogeneration, particularly when such incentives may lead to a net increase in the use of oil and gas. Third, to the extent that tax incentives are provided by Congress for the encouragement of cogeneration and industrial energy management, it is essential that utilities receive equal treatment. I will address each of these issues in sequence in my testimony today.

Tax Incentives for Cogeneration

The current energy tax credit (ETC) for cogeneration equipment is 10 percent and applies to "property which is an integral part of a system for using the same fuel to produce both qualified energy and electricity at an industrial or commercial facility at which, as of January 1, 1980, electricity or qualified energy was produced." Internal Revenue Code §48(l)(14)(A). The proposed Industrial Energy Security Tax Incentives Act extends tax credit availability through 1986, provides tax incentives for associated cogeneration property, and increases the level of the energy tax credit (ETC) to 20 percent.

In view of the time required to implement tax incentive legislation and view its effects, EEI believes that the extension through

1986 of the ETC as proposed in Section 2(a) of Senate Bill 750 may well be merited. We further believe that it would not be unreasonable for incentive credits to be made available for new as well as existing cogeneration equipment in view of the fact that a substantial amount of cogeneration may fall into this category.

With respect to the extension of the ETC to "associated cogeneration property" as proposed in Section 5(a), the provision is so unclear that EEI is unable to present a position at this time. At the very least, however, we believe that Section 5(a) should be modified tomore clearly define eligible "associated property." The proposed definition is subject to being construed to include production process equipment not directly related to energy generation. We do not believe that it is the intent of Congress to encompass production process equipment in a tax incentive program for cogeneration.

EEI believes that cogeneration is an important technology in meeting the overall goal of reducing our energy needs. However, we feel that it is important that new energy technologies be evaluated based on their economic merits, savings of scarce fuels, and ability to compete with alternate energy forms in the free market. The Public Utility Regulatory Policies Act (PURPA) provided special incentives for cogeneration by exempting industrial cogenerators from state and federal rate regulation, certain sections of the Federal Power Act, and the Public Utility Holding Company Act of 1935. Regulations promulgated by Federal Energy Regulatory Commission (FERC) under PURPA allow cogenerators to sell all of their electric power production to utilities at the utility's full avoided cost, and purchase back all its power needs at non-discriminatory (average cost) rates. The Crude Oil Windfall Profits Tax Act provided an additional incentive to cogeneration by providing a 10 percent energy tax credit.

Our fear is that the provision of the additional 10 percent ETC proposed in Senate Bill 750 for industrial cogeneration coupled with existing incentives will distort the economic valuation of cogeneration vis a vis other technologies for industrial energy use. The combination of incentives could lead to cogeneration applications which are not purely based on economic and energy savings, but rather on the ability of energy users to claim all of the legislated incentives. Cogeneration, in particular, is not a new technology and its costs and economics are well known to all large energy users. We believe that cogeneration development will occur when there are economic and energy saving benefits to the user, without additional special tax incentives. Thus, EEI does not support an additional 10 percent ETC for cogeneration.

Tax Incentives for Oil and Natural Gas Cogeneration

In addition to increasing the level of the energy tax credit, the proposed legislation also removes current tax credit eligibility restrictions on oil and natural gas cogeneration. Current regulations prohibit eligibility for the ETC if oil or natural gas usage in a cogeneration facility exceeds 20 percent (on a BTU basis) for any taxable year. Section 3(a) of the proposed legislation removes these current restrictions by amending Section 48 of the Internal Revenue Code of 1954 to provide an ETC for oil and natural gas-fired cogeneration, provided that the total oil and gas usage and total energy input per unit of output at the facility is reduced through cogeneration or other energy efficiency investments. EEI opposes the extension of energy tax credits to oil and natural gas cogeneration solely on the basis that there is a reduction of oil or gas usage at the plant or process level.

The reason for EEI's opposition is that the proposed legislation does not take into account oil and natural gas usage in the overall energy system, but is rather based on site or process specific calculations. Cogeneration is often thought of as a replacement for new electric utility central station generation investment. The utility industry is working very hard on converting economically obsolete oil and gas-fired generation with alternate fuels, and building new coal and nuclear central station plants. If oil and gas industrial self-generation replaces alternate fuel use by electric utilities, then we believe that the legislation does not meet its stated goals of accelerating the use of abundant domestic fuels and reducing our dependence on foreign oil.

To give an example of the potential effects of the bill, consider a utility generating primarily with coal and nuclear plants and with a sufficient reserve margin. Under the bill, as we interpret it, an industrial or commercial cogenerator could receive an energy tax credit for a facility which replaces purchased electricity from the alternate fuel-fired utility with oil and gas-fired cogeneration. This occurs because, even though the facility would increase its use of oil and gas at the facility itself, the computation of net oil and gas savings is based on barrels of oil equivalent BTU savings assuming that electricity purchases are converted to oil and gas BTU's at 10,000 BTU's per kilowatt-hour. Tax incentive policy should be based not solely on BTU savings but also on system-wide net savings of scarce fossil fuels. The assumption that increased efficiency in cogeneration of electricity will result in reduced use of oil and gas is a false premise. Thus, the bill will provide an improper incentive to replace purchased electricity, which may be generated from alternate fuels, with oil and gas.

In addition to the potential increase in overall oil and gas use by the energy system, EEI believes that tax incentives for oil and natural gas use may have other detrimental effects. The development of diesel cogeneration units for commercial and industrial applications will have undesirable environmental effects, particularly in urban areas. We believe that Congress should not promote oil and natural gas cogeneration, unless there is a clear demonstration of system-wide oil/gas savings over the lifetime of the facility, taking into account both the availability of alternate fuels and the national goal of replacing electric utility oil and gas generation with alternate fuels.

Equal Competitive Opportunity for Electric Utilities

We stated earlier that EEI does not support an additional 10 percent ETC for cogeneration facilities. We do, however, believe that any special tax incentives provided for cogeneration must be available to electric utilities at the same level as all others. The distinction between "publc utility property" and other types of property eligible for investment tax credits is one which is not grounded in sound public policy. In realizing the objective of optimum development of new sources of cogeneration and small power production, electric utilities are certainly as well qualified as any other entities to do so on a basis equitable to consumers. Thus we believe that ownership of cogeneration facilities by utilities, as well as nonutilities should be encouraged. If utilities are to be able to own cogeneration facilities, they must be able to compete with non-utility owners for the sale of steam. If cogeneration electric sales by the utility are priced either the same or below that for non-utility owners (as may be the case with regulated sales by utilities), than the utility would have to price its steam output either the same or higher than a non-utility owner. However, if the non-utility owner is receiving an energy tax credit not available to utilities, then utility owners cannot be competitive with non-utility owners for cogeneration development.

Additionally, utilities are more likely to use coal or alternate fuels in cogeneration applications because of their experience and expertise using these fuels and associated technologies. However, because cogeneration provides a dedicated steam supply to a single customer, there is an increased risk to the utility because of potential changes in steam demand. To the extent that non-utility cogenerators are compensated for increased risk through the ETC, utilities should also be compensated. Thus, providing equal tax credit treatment to utilities will further promote the development of cogeneration.

Section 4(f) of the proposed "Energy Security Tax Incentive Act of 1981" does appear to allow utilities to receive ETC benefits to the extent they own an interest in a PURPA "qualifying facility." However, we do not believe this provision goes far enough in that PURPA limits utility ownership in a qualifying facility to a 50 percent interest. Although it is not in the purview of this committee, EEI is strongly interested in removal of the 50 percent ownership limitation of PURPA. Representative Alexander of Arkansas has introduced legislation, H.R. 2876, which accomplishes this goal.

For the purpose of S. 750, we would prefer to see that any ETC made available to non-utility energy efficiency investments also be made available for utility investments of this type. We would call your attention to S. 1517, introduced by Senator Matsunaga which amends paragraph (17) of Section 48(l) of the Internal Revenue Code to permit utilities to receive ETC's for solar, wind, geothermal or ocean thermal energy property. We support adoption of that legislation, modified to include cogeneration property, for the consideration of this Committee.

Summary

EEI supports the efforts of this Committee to promote industrial and commercial energy efficiency in order to reduce our dependence on scarce and imported fossil fuels. However, as far as cogeneration is concerned, we do not believe that an additional 10 percent energy tax credit is necessary to promote efficient use of energy. Most importantly, we believe any special tax incentives for oil and natural gas cogeneration may if not properly structured have detrimental effects on the overall use of oil and natural gas, and should not be promoted by Congress. In any event, EEI believes that any energy tax credits offered for cogeneration should be applied equally to utility and nonutility owned facilities.

Senator WALLOP. Mr. Stanger

STATEMENT OF RICHARD B. STANGER, ATTORNEY, NOSSAMAN, KRUEGER & MARSH, WASHINGTON, D.C., ACCOMPANIED BY STEPHEN JOSEPH

Mr. STANGER. Mr. Chairman, I am accompanied this morning by Mr. Stephen Joseph of our office. I would like to commend you and Senator Durenberger, respectively, for the development of S. 750 and S. 1288 for consideration at the present time. On behalf of a broad coalition interested in preserving the present law credits as well as developing some new credits for renewable energy and conservation, we have recently submitted an extensive paper to the Treasury Department, refuting their principal arguments as to why these credits do not deserve a proper place in the tax system. We have submitted that paper as part of this hearing, for the record.

I would like to summarize a couple of the points, specifically, refuting Treasury's principal arguments with respect to the credits. Treasury relies principally on two points in stating that the credits are no longer necessary and, by implication, should not be extended as you would like to do.

The first is the recent decontrol of oil. The second is the institution of the 1981 Tax Act and the remainder of the administration's tax package which Congress enacted.

With respect to the decontrol of oil, I think Senator Durenberger eloquently pointed out before that oil just simply has not been decontrolled; the United States just no longer controls it. In fact, the price of oil is considerably subjected to control by the OPEC cartel. And, in addition to that, when we are dealing with renewable energy and conservation industries, we are faced in the last several years with unprecedented interest rates and unprecedented levels of inflation which, to the extent that oil prices have risen, have allowed those prices not fully to compensate for the additional costs of these types of investments.

In addition, they point to the ACRS cost recovery system and say that that is now the new incentive and that should supplant specific incentives such as energy tax credits. I think that they may point to it as some great, neutral feature which would allow the market to take care of everything. There is nothing more neutral about ACRS than there is about anything else. If you take investments that will be used over varying lives and will have benefits for companies over varying lives, and you say that they will all fit in this category, so therefore you can write them off over 5 years, that is not neutral. It is consistent, but it is not neutral.

We have done calculations which show that the ACRS recovery system is less favorable to many renewable energy and conservation types of equipment than the old ADR system would be. In addition, where the ACRS system shows up more favorable, it is more favorable by something in the nature of, like, 6 cents per dollar of investment, where the loss of energy tax credits very often can cost the company something like 21 cents per dollar of investment. So you have about a 15-cent swing there.

In addition, the Treasury points to their R. & D. credit. R. & D. credit, while it would be of some help as far as future research and future development is concerned, is not the immediate benefit that is needed. A lot of these companies have been heavily into R. & D. for a long, long period of time, and because the credit is based on incremental expenses over a 3-year base period, one can't anticipate that they will have the increases in expenditures necessary to take advantage of the credit.

In addition to that, a lot of these technologies are reaching the point where they are ready for present production, and present production isn't one of the incentives to which that particular credit is geared.

Thank you very much.

Senator WALLOP. Thank you, Mr. Sanger.

[The prepared statement follows:]

STATEMENT OF

RICHARD B. STANGER

NOSSAMAN, KRUEGER & MARSH

BEFORE THE

SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION

OF THE

COMMITTEE ON FINANCE

UNITED STATES SENATE

October 19, 1981

Mr. Chairman, it is a pleasure to appear before this Subcommittee to testify on energy tax incentives. I am a partner in the law firm of Nossaman, Krueger & Marsh.

On October 5, a broad coalition of interested parties met with Treasury Department representatives to discuss serious concerns relating to the possible Administration proposal for cutbacks in the tax credits presently available for renewable energy and conservation projects. As a follow up, Nossaman, Krueger & Marsh prepared a comprehensive written analysis demonstrating the need to retain these credits and submitted it to the Treasury Department on behalf of the coalition.

A revised copy of the analysis is submitted with this testimony. I would like to summarize its findings for the benefit of the Subcommittee.

[The above named analysis has been filed in the official Committee files.]

Firstly, repeal of the renewable energy and conservation tax credits, particularly in combination with the massive budget cutbacks in the supporting programs in the Department of Energy, would result in the curtailment of a large number of projects, impede the timely development and expansion of the renewable energy and conservation industries, and result in damage to the economy by reductions in employment and exports.

Secondly, the renewable energy and conservation industries represent a strategic infant sector of the economy. Even with present Government tax subsidies, this sector operates at an economic disadvantage with respect to both conventional domestic energy sources and foreign renewable energy and conservation competitors.

Thirdly, there has been no change in the circumstances that led to enactment of the credits in 1978 and 1980 such that the basis for their retention has been invalidated. The credits were passed because of a detrimental national dependence on imported energy. This dependence has not been significantly altered. Oil decontrol, the planned decontrol of natural gas, the establishment of the Strategic Petroleum Reserve and emergency petroleum allocation regulations do not reduce the need for fostering a renewable energy industry. Increases in oil and gas prices alone have not produced growth in the renewable energy and conservation market. Moreover, it is not reasonable to expect infant industries to compete on a free market basis with an international cartel with the power to set prices at rates which will make market penetration of new products financially unsound. The Strategic Petroleum Reserve and emergency allocation regulations solve only short-term management problems following import restrictions. They fail to address long-term supply issues.

Fourthly, the replacement of the ADR depreciation system with the Accelerated Cost Recovery System (ACRS) will not increase the return on renewable energy investments. Also, while the new credit for incremental research and development expenditures is of some use, it is most important at this point to generate sales and production based on current technology. Moreover, because the renewable energy industry has already invested so heavily to reach the production stage, incremental expenditures may be small.

Fifthly, investors put their capital into a venture because of the expectation of profit. The greater the risk presented by a particular venture, the greater margin of profit the investor will require before it is willing to make an investment. At the present time, investments in renewable energy and conservation projects tend to be of a high risk nature compared to other types of investments. As a result, they do not generally, standing alone, present investors with a sufficient margin of profit to attract the needed investment capital. The tax credits, in many cases, provide an additional margin of profit to eliminate this insufficiency.

Sixthly, after economic (e.g., employment) consequences are taken into account, the repeal of some or all of the renewable energy tax credits may not result in the net revenue gains predicted by the Treasury.

Finally, the Administration's previous statements supporting the credits, reliance on their continued existence as a basis for Department of Energy cutbacks, and explicit Administration recognition that the credits are effective are inconsistent with proposals to repeal some or all of the credits. Reliance on Administration statements led to support by companies for the Administration's economic program.

I hope this summary will be useful to the Subcommittee in its consideration of the need to retain the credits. I would be happy to respond to your questions on the matters covered by the summary or on other related issues.

Senator WALLOP. Mr. Wilson.

STATEMENT OF JOHN W. WILSON, ASSISTANT DIRECTOR, RENEWABLE ENERGY INSTITUTE, WASHINGTON, D.C., ACCOMPANIED BY LEE GOODWIN, TAX ATTORNEY, OF PATTON, BOGGS & BLOUGH

Mr. WILSON. Mr. Chairman, thank you very much for letting us appear today. Accompanying me is Lee Goodwin with Patton, Boggs & Blough. He is a tax attorney who has been assisting this broad coalition of groups involved in energy credits, along with Nossaman, Krueger & Marsh.

First of all, I would like to thank both of you and the other members of the subcommittee who have not been able to be here today. The leadership in this area is most helpful, particularly at this time, and we are very understanding of some of the problems with supporting these credits in the face of the administration's strong front. But we think that your efforts are to be highly commended for stepping out early.

I represent an organization known as the Renewable Energy Institute. It is a nonprofit organization conducting research and analysis and new issues affecting a broad range of renewable energy technologies, everything from Federal tax, hydro, wind, to biomass, renewable fuels—you name it, and we do a little bit in it. We are very supportive of both of the bills that are under consideration today. We have submitted some materials, and we will submit additional materials, detailing some technical points which we think should be taken into consideration before the bill is marked up.

Mostly we would like to make two or three major points. The first one is echoing Richard's point about market forces. It is often forgotten that the free market does not provide for our national defense. That is largely the reason why the Congress every year has to appropriate moneys and there is a large organization devoted to building up that defense. In the same way, energy policy has been slipped aside in this free market discussion. It is very important that, as we discuss with Treasury the revenue impacts of these credits and the value and the economics, 15 cents here or 6 cents there, we really consider this national security issue. I think it is vital, and I think everyone we have heard from here today has made that point clear.

The other major point in the market force area is the fact that we do need to strike a balance in subsidies. The market that we have today domestically is a mixture of a pot of subsidies that built up over time. Their longevity is almost as important as the individual increments involved. Renewables and conservation have not had a fair share yet, and we are about to tear down what we have.

I think the final point I would like to make is: The Administration's proposal to repeal the existing credits is particularly dangerous right now. I know of over $4 billion worth of projects in alcohol fuels and hydro and wind that, if going up today, would have been seriously jeopardized by just the mere idea, and the fact that the President transmitted that idea in his party's speech—very, very dangerous for our current situation in energy today.

I thank you for letting us appear before you.

Senator WALLOP. Thank you, Mr. Wilson.

[The prepared statement follows:]

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Testimony of
John W. Wilson, Assistant Director
Renewable Energy Institute
Before the Subcommittee on Energy and Agricultural Taxation
on Energy Tax Credits
October 16, 1981

Mr. Chairman, Members of the Committee, I would like to thank you for this opportunity to appear before you and present the views of the Renewable Energy Institute on S. 750 and other matters pertaining to energy tax credits. The Renewable Energy Institute is a non-profit organization which conducts research and analysis into issues affecting the broad spectrum of renewable energy technologies, ranging from the direct conversion of energy sources such as solar, wind, and hydro to the indirect conversions of biomass materials and other renewable fuels.

We would like to express our thanks to Senator Wallop and his colleagues on the Subcommittee for their leadership in the area of energy tax credits. We understand that our time is limited and thus will hold down both our oral and written comments at this time but will submit detailed comments on

S. 750 and other matters pending before the Subcommittee by the November 2 deadline. The following brief comments are designed to give the Subcommittee a feel for our concerns and the general outline which our detailed comments will follow.

In general, the Institute is very much in favor of rewarding demonstrated energy savings through the tax system. The development of conventional fuels in this country was strongly spurred by the use of tax credits and depreciation mechanisms, thus it is only natural that similar systems be devised to support energy efficiency and the enhanced use of alternative energy equipment. Of all the incentives available to the Congress, tax incentives are perhaps the best tool for increasing the use of these technologies within the industrial and commercial sectors. As the Senator and his colleagues well know, tax incentives offer a more stable environment for the business planner, and thus are more easily worked into company forecasts and can thus achieve the desired goals much faster than other forms of government support.

We are particularly pleased that the Senator is on record in support of this type of incentive at a time when the "free market" philosophy of the Administration has been offered by some officials within the Treasury Department as justification for dismantling some of the existing energy tax incentives. The fact of the matter is that in today's free market exists a blend of market forces from many sectors of the economy which effect the buying patterns of all energy consumers. Many subsidies are clearly visible and quantifiable, such as existing tax credits for energy expenditures or research and development programs for energy technologies, while others, such as the ability to expense the cost of conventional fuels burned in the course of a business, are much less understood but just as important factors in our daily energy decisions. Perhaps the most important, yet most misunderstood, subsidy in today's energy market is that component of our military and foreign aid programs which is inextricably linked to the supply of oil from the Middle East, an amount which seems to increase in never ending spirals.

Although in general we support the objectives of the legislation, there are several key problems which should be taken into account before this bill is enacted into law. The first is the problem of assuming that the Internal Revenue Service will look with favor upon a new set of energy initiatives. In particular, I question the wisdom of providing any latitude to the Service in interpreting the amount of credit which should be available for various types of equipment for various applications. In our detailed comments to be filed with the Committee, we will provide lengthy documentation of several problems which exist with the existing tax credits, and in particular with the Service's interpretation of Congressional intent. Two factors contributing to these problems are that Treasury has no inherent energy expertise and has a very strong countervailing objective in guarding the Treasury from increased revenue loss. It is very instructive to note that with all the specific criteria and procedures that were laid out by the Congress for adding new energy saving measures to a list of qualifying property in both the Energy Tax Act and the Windfall Profits Tax Act, no item has been added to this date.

In fact, Treasury's action with regard to the credits should include several footnotes. The first is that it took over two years for Treasury to enact regulations for credits which would last only four years which were enacted under the Energy Tax Act of 1978. And those regulations which were promulgated include several prohibitions which ran clearly counter to Congressional intent, including several new twists on ways to interpret other uses for clearly energy-related property. The House co-sponsor of the Chairman's bill, Congressman Cecil Heftel of Hawaii, has invested quite a bit of time in working out the details of a tax credit to encourage home builders to incorporate passive solar design features within newly constructed residences. The vast majority of that time was involved in developing assurances for the Treasury that in fact, the demonstrated energy savings could be proved. Once all the computer simulations had been run, and last bureaucratic assurances given, the new Administration took over and we are back to square one. I raise these issues to simply point out to the Chairman that good ideas can often lead to disasterous results when entrusted to the Treasury for administration.

We are pleased to see that the bill includes an expanded list of qualifying property, along with new categories of specially defined property for which the Chairman would like to provide incentives. However, we question the policy objectives which might be implied by providing incentives to some types of energy property over others. It is not that the incentives you wish to extend to these types of property are unwarranted, but rather it appears that the bill specifically excludes most renewable energy equipment. We are particularly concerned that the extensions of particular energy tax credits for certain types of equipment that are included in the bill and the accompanying exclusion of similar extensions for renewable energy credits could create a market basis against these energy producing options. This is particularly true of the renewable energy credits that expire flatly after December of 1985, without any gradual phase out.

Although our detailed comments will include a more comprehensive list of technical notes, I would like to list the following three items at this juncture. The bill's treatment of replacement appears to be a little ambiguous, in that replacement of property is a fairly well understood concept. If the concept requires language I would simply suggest that it be crafted in such a way as to not provide an opportunity for Treasury to further define replacement in a more restrictive manner.

The legislation also attempts to resolve a problem of serious proportions that Treasury has developed with regard to dual functions for a single piece of equipment or system. In the area of energy efficiency and renewable energy technologies, there are many occassions where cost savings can occur through the use of equipment and materials which can serve two functions or even more. This beauty of design is an added benefit of the technology, and thus can sometimes serve to enhance the return on investment, or more appropriately the "bottom line". Unfortunately, Treasury regulations prohibiting the claiming of credits for equipment which does serve more than one function have often resulted in more elaborate systems and/or financing in order to obtain the proffered credits, often at the expense of the systems' design or efficiency. This is a plaguing problem with regard to energy storage and transmission, and I suspect it will continue to be a problem unless Congress resolves it through legislative action. Unfortunately, the bill simply provides a more confusing definition, and thus another opportunity for more confusing regulations. I am not sure that anyone has yet developed an answer to this problem, but I strongly urge the Committee to devote some time to this issue before the bill moves out of committee.

We are also concerned that limitations on the use of credits in those instances where expansion can also occur inherently limits the use of these technologies in instances where construction of additional plant capacity may be in the works. It would be highly unusual for the small amount of money available through one of these credits to drive the economics of a major corporation's planning for expansion. However, at the time of such planning, the availability of these credits could tip the balance in the mind of a planner who is considering taking advantage of these newer energy technologies. In this sense the credit serves largely as a risk premium, aimed at pushing those marginal projects just over that imaginary line to meet the corporate planner's objectives. Thus we would urge that the section relating to expansion limitations be carefully examined to assure the proper policy objectives are met.

Finally, we would like to draw our testimony to a close by touching on a matter of grave importance to the future of all alternative energy technologies: the proposed repeal of the existing energy tax credits. As I am sure the members of this Committee are aware, President Reagan on September 24 proposed the repeal of several obsolete or abusive tax items in order to reduce revenue loss in the coming fiscal years. One of the items listed as either abusive or obsolete was the existing energy tax credits for energy conservation and renewable energy technologies.

Since the President proposed the examination of this option, we have been advised by Treasury officials that the credits are not considered abusive, but rather obsolete because of the enactment of the Accelerated Cost Recovery System in the Economic Recovery Tax Act of 1981. We will not dwell here upon the arguments which were presented to the Treasury in the form of numerous letters and memos, including the extensive work prepared for our coalition by the firm of Nossaman, Krueger and Marsh. However, we do think it important to point out to the Senators that these credits were a very limited response to a very large problem, namely our country's dangerous addiction to imported oil. The credits have barely begun to work, although their effect has been quite staggering. In 1979, 4.8 million individual taxpayers claimed credits for a total of $196 million in renewable energy investments and $3.3 billion in residential energy efficiency improvements. Business taxpayers claimed energy tax credits for $103.8 million in investments, $42.6 million of which was in solar and wind energy alone.

Our coalition which includes virtually every organization representing renewable energy technologies, industry and consumers has learned of over $2 billion worth renewable energy projects that are in the pipeline today that are severely threatened by the mere proposal to repeal the existing energy tax incentives. These projects range from alcohol fuels plants and hydro facilities to wind farms consisting of hundreds of newly constructed wind energy machines. Anything this Committee can do to express its concern to the Administration for this very ill advised proposal will go along way towards ensuring the viability of the many technologies which the Chairman would like to encourage with S. 750.

Finally, I would like to leave you with a quote from a recent report by the investment banking firm of Hambrecht and Quist. "The alternate energy industry should be of of the fastest growing industries of the 1980's. We expect the industry to grow to the $50-60 billion level by the 1990's as companies in the industry reduce systems cost and identify sight specific applications which are compatible with renewable energy resources."

The rapid growth of this industry will continue if and only if Congress maintains the current market climate for energy alternatives. To the extent that uncertainty or prejudice is added to the current market, the real market, then this forecast will become an overly optimistic projection.

Senator **Wallop**. I want to thank you all for showing up here, and your testimony will be included in the record in its entirety. We were going to question you on some of these points that you brought up. I would suggest, again, that it is important not to let your efforts stop here. While your testimony has been useful and appreciated, the force of your presence in this arena will be required, if we are going to get anywhere with either of these concepts or both of them.

So, don't walk off and say you have done your duty. We will continue to need your help. Thank you very much.

The hearing is adjourned.

[Whereupon, at 12:39 p.m., the hearing was adjourned.]

[By direction of the chairman the following communications were made a part of the hearing record:]

EDWARD M. KENNEDY
MASSACHUSETTS

United States Senate
WASHINGTON, D.C. 20510

October 5, 1981

The Honorable Malcolm Wallop
United States Senate
Washington, D.C. 20510

Dear Malcolm:

Because of my interest in the industrial energy conservation legislation, I asked the Library of Congress to prepare a comparison of legislation related to this subject which is being considered in Congress. I would very much appreicate it if you would make this material part of the record in your hearing of October 19.

Looking forward to working with you on this legislation.

Sincerely yours,

Edward M. Kennedy

Enclosure

Congressional Research Service
The Library of Congress

Washington, D.C. 20540

COMPARISON OF BILLS TO INCREASE INDUSTRIAL AND COMMERCIAL ENERGY CONSERVATION

Carolyn Kay Brancato
Specialist in Commerce and Industry
Economics Division
September 24, 1981

INDUSTRIAL AND COMMERCIAL INVESTMENT TAX CREDITS

Bill	Sponsor	General Provisions	ITC Rate	Period of Eligibility
S.750 H.R.2640 Identical bills	Wallop, Boren, Kennedy, et al Heftel, Ottinger, Martin, et al	increases ITC from 10% to 20% for alternative energy property, specially defined energy property, recycling equipment & cogeneration equipment	§46(a)(2)(C) ITC rate 20%	1/1/81 to 12/31/86
		adds 2 new categories of energy property eligible for 20% ITC: - "qualified industrial energy efficiency property" and - "associated property"	20%	1/1/81 to 12/31/86 plus affirmative commitments section 46(a)(2)(C)(iii) for projects with long planning times extended from 1990 to 1994
		defines qualified industrial energy efficiency property: - modifies or replaces processes carried on as of 1/1/81 for an existing indust'l or comm'l facility - installation results in utilization of less energy per unit of output - installation also results in aggregate annual decrease in energy consumed of at least 1,000 barrels of oil equivalent (BOE) - installation must not increase total amount of oil & natural gas consumed per unit of output - useful life must be at least 3 years - prohibits double dipping of other energy tax credits - proportionate reduction in benefit as capacity of facility increases - credits depend on amount and cost of energy saved: -- if energy investment is less than $10 per BOE saved, credit is reduced to that percentage which bears the same ratio to 20% as the actual BOE cost of the property bears to $10 ($5 for equipment placed in service within 2 yrs.) -- if BOE saved is between $10 and $60, the full 20% credit is applied -- credit is reduced when investment becomes too great per BOE; there is a $60 per BOE cap regardless of the percentage equivalent -- the ITC limitations are applied at end of a recomputation period where actual operating experience over a representative period is known		
		defines associated property as all property necessary to achieve the results intended by the qualifying investments in the other categories of the bill		

Bill	Sponsor	General Provisions	ITC Rate	Period of Eligibility
S. 750 and H.R. 2640 (contd)		specifically defines equipment added in bill and originally listed in tax act for the following: alternative energy property §48(l)(3) property -- includes equipment other than boilers (such as combustion turbines & generators producing energy from an alternative source) -- includes heat treating and melt furnaces (as defined) using an alternate substance (as defined) specially defined energy property §48(l)(5) property -- adds new items of equipment (as defined): indust'l insulation, an industrial heat pump, modifications to burners, combustion systems or process furnaces, batch operations conversion equipment, etc. -- adds definitions of several items in existing law: heat exchanger, waste heat boiler, automatic energy control system, and combustible gas recovery system -- clarifies and expands authority of Secretary of Treasury to add additional items of equipment and gives Secretary of Energy authority to recommend items to Secretary of Treasury recycling equipment §48(l)(6) property -- broadens definition to include certain waste preparation equipment and to assure that equipment to recover and store reusable resources is included -- defines "solid waste" as including semisolid and liquid materials cogeneration equipment §48(l)(14) property -- broadens and specifically includes certain cogeneration equipment such as mechanical shaft power as well as electrical power equipment -- eliminates the restrictions on oil- or gas-based cogeneration systems -- eliminates limitation that allows the credit only for "capacity increases" other provisions: continues present law excluding public utility property except that bill exempts qualifying small power production and qualifying cogeneration facilities from public utility property exclusion limits credit in cases where capacity of the process or facility increases more than 10%; in such cases, credit allowed is based on a pro rata allocation of energy-related costs versus total costs clarifies coverage of replacement property if the replaced property is retired from service	(see above)	(see above)

Bill	Sponsor	General Provisions	ITC Rate	Period of Eligibility
S. 787	Kennedy	in general same provisions as S. 750 except that tax credits in excess of liability are refundable	§46(a)(2)(C) ITC rate	(see above)
		also includes a provision allowing noncorporate taxpayers who are lessors to claim the credit for qualified industrial energy efficiency property	20%	
Amendment #256 to 1981 Omnibus Tax Bill	Kennedy	in general same as S. 750 except that ITC is increased from 10% to 15% (instead of 20% as in S. 750)	§46(a)(2)(C) ITC rate 15%	
		also, provisions generally same as in S. 1323 (see below)--extends residential energy credit to lessors and increases residential energy credit maximum	§44(C)(a) ITC rate	
		from $2,000 to $3,000 for conservation equipment and	15%	
		from $10,000 to $15,000 for renewable energy equipment	40%	

COMMERCIAL, RETAIL, AND APARTMENT HOUSE INVESTMENT TAX CREDITS

Bill	Sponsor	General Provisions	ITC Rate	Period of Eligibility
S. 475 H.R. 1378 Identical Bills	Durenberger Frenzel	extends to commercial and retail establishments 10% ITC for §48(1)(5) specially defined energy property by substituting for the term "commercial process"	§46(a)(2)(C) ITC rate	Retroactive to enactment of Energy Tax Act
		the term "commercial activity" to reverse IRS exclusion (47FR 7290, January 23, 1981)	10%	10/1/78 to 12/31/82
S. 1288	Durenberger	increases ITC for §48(1)(5) specially defined energy property from 10% to 20% and extends coverage to commercial and retail establishments	§46(a)(2)(C) ITC rate 20%	For specially defined and insulation property 1/1/81 to 12/31/86
		also adds to §48(1)(5) eligible equipment: heating and cooling efficiency equipment such as energy management equipment, also includes refrigeration and food processing equipment (unlike S. 1323 which includes lighting equipment but not refrigeration equipment - see specifics in each bill)		
		adds a new category of §48(1)(2) energy property and applies a 20% ITC to this category: insulation property for industrial, commercial and retail buildings or facilities		

CRS-4

Bill	Sponsor	General Provisions	ITC Rate	Period of Eligibility
S. 1323	Tsongas, Kennedy	redefines §48(l)(5) specially defined energy property to cover any commercial facility (hotel, office building, educational facility, health care facility, retail or wholesale trade facility) to reverse IRS exclusion (46FR 7290, January 23, 1981)	§46(a)(2)(C) ITC rate 10%	Retroactive to enactment of Energy Tax Act 10/1/78 to 12/31/82
		increases §48(l)(5) specially defined energy property ITC from 10% to 20%	20%	7/1/81 to 12/31/85
		adds to list of §48(l)(5) specially defined energy property various heating, cooling and lighting energy conservation systems (unlike S. 1288 which does not include lighting but does include specific reference to refrigeration, food processing, and storage equipment - see specifics in each bill)	20%	7/1/81 to 12/31/85
		extends ITC coverage period from 1982 to 1985 for general-rule energy property	10%	10/1/78 to 12/31/85
		the existing residential energy credit is increased for energy conservation expenditures — rate is 15% of such expenditures up to a maximum which is increased from $2,000 to $3,000 (e.g., $450 per unit) for renewable energy expenditures — rate is 40% of such expenditures up to a maximum which is increased from $10,000 to $15,000 (e.g., $6,000 per unit)	§44(C)(a) ITC rate 15% 40%	7/1//81 to 12/31/85
		allows apartment building owners to qualify for existing residential energy tax credits and increases the maximum for energy conservation property - rate is 15% (10% if §167 depreciation is taken) up to $3,000 maximum for renewable energy property - rate is 40% (30% if §167 depreciation is taken) up to $15,000 maximum	15% 40%	7/1/81 to 12/31/85

Bill	Sponsor	General Provisions	ITC Rate	Period of Eligibility
H.R. 3142 credit	Dingell	extends existing 15% residential energy conservation--up to $300 per dwelling unit--to apartment building owners (does not increase the maximum and does not cover renewable energy property as in S. 1323)	§44(C)(a) ITC rate 15%	1/1/79 to 12/31/85
H.R. 3910	Schneider	redefines §48(1)(5) specially defined energy property to include any existing process or activity (intended to expand definition to commercial and retail activities and reverse IRS ruling) adds a variety of equipment to conserve heating, cooling and lighting (see specifics in bill)	§46(a)(2)(C) ITC rate	
		increases ITC for specially defined energy property from 10% to 20%	20%	1/1/81 to 12/31/89
		extends ITC and establishes rate of 30% for owners of residential rental property; treats them as businesses and not as residential owners	30%	1/1/81 to 12/31/89

AMERICAN RETAIL FEDERATION
1616 H STREET, N. W. WASHINGTON, D. C. 20006 (202) 783-7971

LOYD HACKLER
PRESIDENT

November 17, 1981

The Honorable Malcolm Wallop
Chairman
Subcommittee on Energy and
Agricultural Taxation
United States Senate Finance Committee
Washington, D.C. 20510

Dear Senator Wallop:

This letter is submitted by the American Retail Federation for inclusion in the record of the hearings held on October 19, 1981 on S. 1288, the "Commercial Business Energy Tax Credit Act of 1981" and S. 750, the "Industrial Energy Security Tax Incentives Act of 1981." A copy of this letter is being sent to each member of the Finance Committee.

The American Retail Federation is an umbrella organization composed of 27 national trade associations; state retail associations from all 50 states and the District of Columbia; and more than 120 retail corporations. In all, the American Retail Federation represents, directly and indirectly, a million and a half retailers.

In 1973,*/ the commercial sector consumed 10.8 quadrillion BTUs (quads), or 14.4 percent of the total energy consumed in the U.S. during that period. Over 75 percent of this energy was used for space heat, air conditioning and lighting: 3.8 quads, or 5.1 percent of total U.S. consumption was used for space heat; 2.9 quads or 3.9 percent of total U.S. energy consumption was used for lighting; and 1.5 quads, or 2 percent of total U.S. consumption was used for air conditioning. There are substantial opportunities for energy conservation in these and other areas of energy use within the retail sector. For example, it has been estimated that automatic energy control systems can reduce the energy consumed for heating, lighting and air conditioning by as much as 20 percent.

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*/ This statistical information is taken from Energy in America's Future, Resources for the Future (1979), p. 75. 1973 is the most recent year for which detailed figures on commercial sector energy consumption are available. Nevertheless, these figures are representative of the relative levels of energy consumption within the commercial sector.

Extending the energy tax credit to commercial energy conservation equipment would provide an important -- and often critical -- incentive for the purchase of such equipment. Businesses generally require a pay-back period for non-essential equipment -- such as automatic energy control systems and other types of energy conserving equipment -- of as little as two or three years. Despite the considerable energy savings which can be achieved through the use of such equipment, these savings are frequently not adequate to satisfy this stringent pay-back requirement. In many cases, the energy tax credit will enable a company to make an investment in energy conserving equipment which would otherwise be financially unjustifiable. In addition, those credits are now available to the industrial sector and equity demands that all sectors be treated equally.

S. 1288 would extend the energy tax credit to a wide variety of energy conserving improvements at existing retail establishments. Although S. 750 is primarily aimed at industrial conservation, it would also provide a significant incentive for energy conservation in the commercial sector by extending the energy tax credit to automatic energy control systems installed at existing retail and other commercial facilities. Therefore, the American Retail Federation strongly endorses the portions of these bills aimed at providing equitable treatment for investments in energy conservation at retail facilities.

The American Retail Federation supports the efforts of this Committee to extend the energy tax credit to a broad range of energy conserving equipment in the retail sector. When combined with other incentives for capital formation, the energy tax credit will provide a significant stimulus for energy conservation in the retail sector.

Respectfully submitted,

Loyd Hackler

Loyd Hackler

LH:pah

Tosco Corporation
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Washington, D.C. 20036
202/223-8200

CAMILLA S. AUGER
EXECUTIVE VICE PRESIDENT
CHIEF OPERATING OFFICER
DIVISION OF GOVERNMENT RELATIONS
AND PUBLIC AFFAIRS

November 2, 1981

The Honorable Senator Malcolm Wallop
Chairman, Energy & Aqricultural Taxation Subcommittee
Dirksen Senate Office Building
Washington, D.C 20510

RE: Hearings on S. 750

Dear Mr. Chairman:

Pursuant to notice given in the Senate Finance Committee press release of September 25, 1981, announcing the Energy and Agricultural Taxation Subcommittee hearing on industrial and commercial Energy Tax Credits, Tosco Corporation submits the following comments for consideration by the Subcommittee in its deliberations on S. 750.

BACKGROUND

Tosco, one of the largest independent refiners in the nation, owns and operates refineries in California, Arkansas and Oklahoma with a total refining capacity of approximately 260,000 barrels per day. In addition, Tosco has been a pioneer in developing oil shale technology, and is a co-owner of the Colony Shale Oil Project in Colorado, the first full-scale commercial oil shale project in the country. The project is designed to produce 48,000 barrels per day of hydrotreated shale oil by 1987. Tosco has always concentrated its effort on producing the maximum quantity of high quality fuels, such as transportation fuels, from resources which, due to their nature, require highly capital intensive equipment. These efforts are evidenced by Tosco's leadership in commercial oil shale development and its programs undertaken at the refineries to maximize their capability to process lower quality crude oils. In order to further enhance efficiency, through energy conservation, Tosco has recently developed programs to utilize cogeneration technology at its refineries.

Tosco strongly supports Congressional action to encourage and facilitate energy conservation as well as conversion from oil to other more abundant energy sources. In particular, Congressional efforts to modify the Business Investment Credit have provided important incentives for industry to invest in energy conservation equipment and to convert to alternative sources of energy appropriate for industrial purposes, thereby conserving the highest quality oil and gas products for their most suitable purposes.

The general concepts embodied in S. 750, representing another attempt to accomplish the continuing national goal of energy conservation and reduction of our dependence on foreign oil, are supported by Tosco. Nonetheless, we feel that in its present form, the legislation may create artificial barriers to maximum utilization of all energy conservation and conversion methods. At a minimum, Tosco fears that the legislation as presently written might result in ambiguities which will make use of the credits less desirable. The deficiencies noted by Tosco relate to the following three subjects:

- The definition of "alternate substance".
- The definition of "cogeneration technology".
- The applicability of the incremental cost rule.

1. The Definition of "Alternate Substance" Should Include Additional Refinery By-Products

The definition of "alternate substance" in S. 750 goes a long way in insuring the maximum utilization of energy conservation equipment by including petroleum coke and petroleum pitch, both of which are refinery process by-products. However, the purpose of the statute would be more fully served if the definition were further broadened to include other important refinery by-products. The other refinery process by-products that Tosco recommends be specifically included in the definition of alternate substance are: petroleum asphaltenes, catalytic-cracker fractionator residuals, and refinery off-gas* (including, but not limited to, refinery fuel gas and CO gas).

It is important that these comparable refinery by-products be included within the definition of "alternate substance" to provide consistency with prior legislative objectives, and to allow maximum flexibility to refinery managers nationwide in getting the most out of their equipment. To include two specific by-products while excluding others, serves only to create artificial barriers to innovative planning for energy conservation by refinery managers.

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* Refinery off-gas (sometimes colloquially called a "waste gas") is included in the provisions of S. 750 in a different context. In subsection (a) of Section 3, waste gases are specifically included in the provision concerning Qualified Industrial Energy Efficiency Property. Therefore, it is arguable that refinery off-gas was intended to be included in the definition of alternate substance.

A refinery is, in the simplest sense, a fuels production plant, rather than a facility designed with fuel consumption in mind. Therefore, good management requires production of the most profitable products for sale, and internal consumption of the least profitable by-products. Certain bottom-of-the-barrel products have never been commercially marketable based on their inferior qualities such as petroleum pitch, petroleum asphaltenes, refinery off-gas, and cat-cracker fractionator residuals. These products must either be disposed of, utilized within the refinery for process heating purposes, or combined with higher quality streams to make a marketable product (usually an unacceptable alternative since high quality products must be used to create lesser quality products).

In the future, refineries will almost undoubtedly be required to use lower quality feedstocks. Because of this, more bottom-of-the-barrel by-products will be produced from a given quantity of crude oil. The most efficient way to utilize the anticipated increase in such by-products at refineries is as a fuel for refinery process heating purposes. Therefore, tax credit incentives should be flexible enough to encourage the large capital expenditures required to make individual refineries capable of more efficiently utilizing, rather than disposing of, by-products.

In the process of refining the bottom-of-the-barrel ("residue"), three solid or semi-solid by-products may be created: petroleum coke, petroleum pitch, or asphaltenes (see Exhibit A). If the residue is coked, then coke is the derivative; if the residue is thermally cracked, then pitch is created; if the residue is hydrocracked, then hydrotreated pitch is the resulting by-product; if the residue is chemically treated, then either pitch or asphaltene is extracted depending on the relative degree of extraction. The gas oils produced from three of the preceding processes are processed in a catalytic cracker (cat-cracker) to produce gasoline. The by-product of this process is cat-cracker fractionator residuals (see Exhibit A). By way of comparison, the Btu value of residue is generally greater than pitch, and pitch has a higher value than either coke, asphaltenes, or cat-cracker fractionator residuals. Therefore, the fuel use value of the four by-products shown in the chart is very low when compared to other oil or natural gas products. Nonetheless, they have Btu value which can be utilized if equipment is modified or built to accommodate them within the refinery.

With respect to gaseous by-products, both refinery fuel gas and carbon monoxide (CO) gas are the result of a number of refinery processes. Their production is, in almost all cases, a by-product of producing the desired slate of products in a refinery. Generally, CO gas has a very low Btu content (under 100 Btu's/cubic foot); refinery fuel gas has a Btu content much higher than CO gas but, due to its numerous impurities, cannot be economically processed into a saleable commodity which can be transported through existing pipelines outside the refinery. However, the Btu value of both gases can be efficiently utilized if equipment is built to accommodate them within the refinery.

In conclusion, there are three additional refinery by-products which Tosco feels should be added to the definition of "alternate substance" to insure the effectiveness and consistency of the legislation: petroleum asphaltenes, catalytic-cracker fractionator residuals, and refinery off-gases (including, but not limited to, refinery fuel gas and CO gas). All of these have utility within the refinery to the extent that equipment can be modified or installed to use them. However, if the credit is not designed to encourage flexibility in their use, they are likely to be disposed of in even greater quantities as refinery feedstock quality declines. Tosco therefore recommends the following amendment:

> Subparagraph (B) of Section 48(l)(3) (defining alternative energy property) is amended by adding at the end thereof the following new sentence: "The term 'alternate substance' includes petroleum coke; petroleum pitch; petroleum asphaltenes; catalytic-cracker fractionator residuals; refinery off-gases (including, but not limited to, refinery fuel gas and CO gas) ; synthetic fuels; and any other product produced from any alternate substance, whether or not such product has undergone a chemical change in the process of its production." (Added words underlined.)

2. The Definition of "Cogeneration Equipment" Should be Clarified to Include Modification or Replacement of Facilities

In one very important respect, the definition of "Cogeneration Equipment" contained in S. 750 is greatly superior to the existing definition: the new definition contains no limitations on the use of oil and gas, which is consistent with the thermal efficiency of cogeneration equipment and the high priority given to such equipment in the National Energy Act of 1978. However, the new definition is ambiguous in one significant regard: it does not make clear the extent to which a taxpayer could modify or replace a boiler operating on January 1, 1980 with a new cogeneration unit consisting of a turbine and waste heat boiler combination. There may be many instances in which, from an engineering standpoint, it would be not only more economical, but also more energy efficient to retire boilers or other units operating on January 1, 1980 and replace them with new units.

This subject was considered by the Senate Finance Committee on October 15, 1979. Senate Report No. 96-394 states at page 83:

> "Where it is necessary to replace an existing boiler in order to enable an existing industrial or commercial facility to cogenerate, this replacement boiler will be covered only to the extent of additional capacity which is related to a cogenerating function."

The matter was also considered by the Conference Committee on March 7, 1980. House Report No. 96-817 contains the following statement at page 129:

> "The conference agreement also clarifies the Senate amendment regarding increases in the capacity to cogenerate. Under the conference agreement, equipment would not be eligible if it merely increases the capacity of the system to produce the primary energy product of the system. For example, if a facility is presently producing steam for process use as its primary energy product and electricity as its secondary energy product, a boiler that merely increases the facility's steam capacity would not qualify."

As a result of these considerations, present subparagraph (B) was included in the definition of "cogeneration equipment":

> "(B) ONLY COGENERATION INCREASES TAKEN INTO ACCOUNT.--The term 'cogeneration equipment' includes property only to the extent that such property increases the capacity of the system to produce qualified energy or electricity, whichever is the secondary energy product of the system."

Since S. 750 would delete in its entirety subsection (B), the intent evidenced in the Senate and Conference Committee reports to include replacement equipment may be lost.

In order to make clear the original intent of the Congress that modifications to, or replacement of, a facility is contemplated within the cogeneration definition, Tosco recommends the following amendment:

> Subsection (A) of paragraph (14) of Section 48(l) (defining cogeneration equipment) is amended by adding at the end thereof the following new sentence: "Nothing herein shall be construed to deny the benefits of the energy percentage of the Business Investment Credit to a facility, all or part of which has been modified or replaced . (Added words underlined)

In conclusion, the congressional intent to facilitate the development and utilization of cogeneration technology has been repeatedly expressed. Both the Public Utility Regulatory Policies Act of 1978 and the Power Plant and Industrial Fuel Use Act of 1978 provided significant benefits to operators of cogeneration technology. The Crude Oil Windfall Profit Tax Act of 1980 then added tax credit incentives for cogeneration equipment installed at facilities operating on January 1, 1980. S. 750 now would further encourage cogeneration technology by deleting restrictions on the use of oil and natural gas, recognizing the inherent efficiency of cogeneration technology. Past congressional action has been consistently designed to provide maximum flexibility for cogeneration project operators so that the nation will benefit from the concept. The logical extension of these steps is to make it clear that old and inefficient equipment can be replaced with modern cogeneration units including a turbine and waste heat boiler combination, rather than requiring the add-on of new equipment to obsolete boilers.

3. S. 750 Should be Clarified to Exclude Oil Shale Equipment from the Incremental Cost Rule

Section 4(i) of S. 750 adds an incremental cost rule to Section 48(l) relating to energy property. Specifically excluded from the rule is alternative energy property, recycling equipment, qualified hydroelectric generating property, or cogeneration equipment. While we feel relatively sure that the rule would not apply to oil shale equipment based upon its present language, the question is not free from doubt. To the extent that experimental oil shale equipment could be construed as an existing process or facility, the rule might be invoked. The result of this would be to discriminate against those companies which have been the front runners in the development of oil shale technology.

Therefore, Tosco recommends the following amendment:

Subsection (19) of Section 48(l) (relating to energy property) is amended as follows: "(19) Incremental Cost Rule.--Property, other than alternative energy property, recycling equipment,qualified hydroelectric generating property, cogeneration equipment, or oil shale equipment, which otherwise qualifies as energy property under this section but which also substantially increases the operating capacity of the existing process, processes or facility, shall only qualify to the extent of the 'energy component' of the property." (Added words underlined.)

CONCLUSION

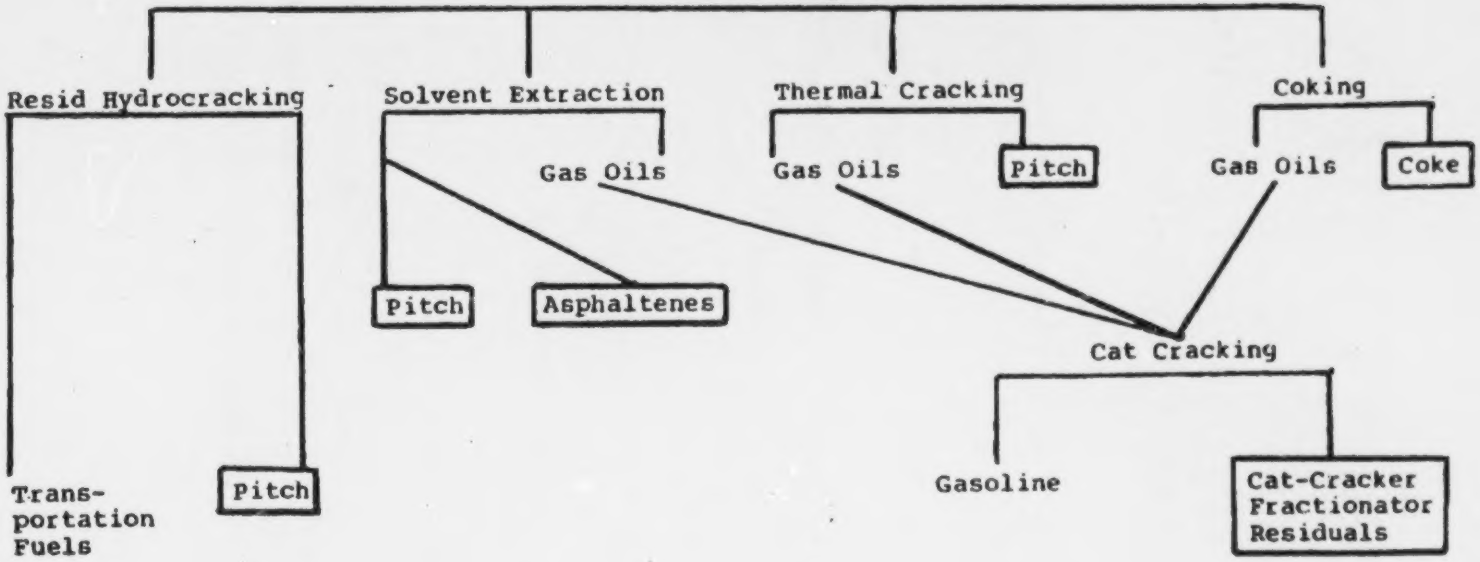
Tosco strongly supports the past actions of the Congress to provide energy equipment tax credits and other incentives to encourage energy conservation and conversion to alternative energy sources. S. 750 is another step in the direction of reducing our dependence on foreign oil, and therefore the objective and concepts of the bill are supported by Tosco. In addition, however, we feel that the clarifying measures suggested in these comments are essential to insure the maximum effectiveness of the legislation and its consistency with national goals and prior Congressional intent. Therefore, Tosco urges the subcommittee to adopt the amendments which are suggested in these comments.

Respectfully submitted,

Camilla S. Auger /HK
Camilla S. Auger

EXHIBIT A

Bottom-of-the-Barrel
Residue Refinery Processes


Resid Hydrocracking
Solvent Extraction
Thermal Cracking
Coking
Gas Oils
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Asphaltenes
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Fuels
Pitch
Gasoline
Cat-Cracker
Fractionator
Residuals

STATEMENT
of the
AUTOMOTIVE SERVICE INDUSTRY ASSOCIATION

by: William G. Smith, Chairman
Executive Committee, ASIA Remanufacturers Div.

subject: S.750, The Industrial Energy Security
Tax Incentives Act of 1981

to: The Subcommittee on Energy and
Agricultural Taxation of the
Senate Finance Committee

date: October 19, 1981

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STATEMENT OF WILLIAM G. SMITH
ON BEHALF OF AUTOMOTIVE SERVICE INDUSTRY ASSOCIATION
TO THE SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
OF THE SENATE FINANCE COMMITTEE

OCTOBER 19, 1981

Mr. Chairman, members of the Committee:

My name is William G. Smith; I am President of Gopher Motor Rebuilding, Incorporated in Minneapolis, Minnesota. In addition, I serve as Chairman of the Remanufacturers Executive Committee of the Automotive Service Industry Association (ASIA) and as a Director of the organization. My statement is submitted to you on behalf of the association and in particular the remanufacturing segment of the association, the vast majority of which is composed of small businesses of less than 100 employees.

The Automotive Service Industry Association (ASIA) is the automotive world's largest and most comprehensive organization, with its membership encompassing more than 8,500 independent automotive wholesalers, warehouse distributors, heavy-duty parts and equipment distributors, automotive electric service distributors, manufacturers' representatives, manufacturers and remanufacturers of automotive replacement parts, tools, equipment, chemicals, paint, refinishing materials, supplies and accessories.

On behalf of the association I express appreciation for the opportunity to submit this statement reflecting the views of the association membership with respect to the need for inclusion of remanufactured products in the provisions of the Energy Tax Act. S. 750, introduced by the Chairman, Senator Wallop, obviously recognizes the importance of reusing our resources in a manner that most efficiently utilizes our energy sources. It is submitted that this bill can more effectively encourage maximum efficiency in energy usage while providing financial incentives that will help our capital starved industry, the economy and the consuming public by making remanufactured products eligible for the energy tax credit.

Remanufacturing of automotive products does make a meaningful contribution toward the alleviation of our energy problems, with equally meaningful side benefits in reducing inflation and pollution. Remanufactured automotive replacement components consist of retreaded tires, remanufactured engines, electrical parts, drive line components, braking system components and many other parts of the vehicle.

Each of the companies engaged in remanufacturing of automotive replacement parts have one thing in common. They are all recyclers of valuable, energy intensive vehicle components that, after passing appropriate inspection, are completely reusable and just as good as new for the purpose for which they were originally designed.

That is where remanufacturing is critical. It saves more of what we already have available. It is utterly ridiculous to take a used part, transport it, melt it down, then recast it into what it was in the first place. All of those operations consume precious energy and that consumption is needless. It is even more ridiculous - and more wasteful - to scrap a used part and replace it with a new one that requires mining more scarce raw materials, transporting them, smelting them, converting to steel, casting, etc., when all we really need to do is remanufacture the old unit.

Look at the kind of energy savings we are already achieving by remanufacturing parts, rather than making new replacements. By remanufacturing approximately 6 million water pumps last year, remanufacturers saved the equivalent of 2.2 million gallons of fuel oil - enough to heat 1,600 homes for a year. Here are some other savings: Brake systems: 30.1 million gallons . . .Starters: 8.9 million gallons. . .Manual transmissions: 21.6 million gallons. Attached to this statement is an illustration of energy savings achieved each year by the remanufacture of engines, transmissions, small parts and tires. The savings amount to 604 million gallons a year and can be substantially more than that with incentives within the economic structure to encourage further increases in remanufactured products.

Conversely, the reusable tire casings, engine housings, electrical components, and many other units being discarded each year represent the waste of the equivalent of hundreds of millions of gallons of crude oil, as well as literally billions of dollars and hundreds of acres of land which must be assigned for solid waste disposal.

Our society can ill afford to lose any portion of the energy, economic and environmental savings resulting from the current level of automotive component remanufacturing, and we can ill afford the present level of waste resulting from the throwing away of retreadable tire casings and reusable parts.

The whole concept of remanufacturing is predicated on saving money by reusing seasoned and tested components at cost savings. This usually results in a savings in excess of 30%. When we talk about the tremendous waste of our natural resources and about the urgent need for energy conservation, a look at the remanufacturing industry can be just that light in the darkness.

This cost saving to the eventual consumer has a sociological benefit in that a large proportion of older vehicles requiring repairs and parts are owned by those in the lower income brackets and the savings available to them permit them to keep their vehicles operational at minimum cost. It also serves as a competitive factor with respect to new automotive replacement parts thus providing benefits to the entire spectrum of the economy.

I would like to relate a personal experience concerning our particular company.

This spring we had a price increase on our remanufactured engines; this price increase became effective on April 27, 1981. We raised our distributor price 8% and the ultimate consumers cost was raised over 11%. On one of our most popular engines the consumer price went from $758.00 to $842.00.

On April 27th our phones became very quiet and our sales dropped about 50%. We studied the situation and hurriedly printed a new price sheet lowering our price to the distributor by 2% - changed the profit structure of the Distributor and the Dealer and lowered the consumer price 6.5% with the net over all effect of a 6% price increase to the Distributor and only a 4% increase to the consumer. This made that same popular engine price increase from $758.00 to only $788.00 and our phones once again began to ring - thank God! However, it also reduced the profit margins both we and our distributors need in order to stay in business.

We learned two very important things during this trying month and a half; the law of supply and demand is out there very strong, and the consumer (our boss) is extremely price conscious and does a lot of shopping.

This brings us to the recommendation I made at the beginning of this statement. Inclusion of remanufacturing automotive replacement parts in the Energy Tax Act would definitely increase the amount of automotive recycling and the savings it represents and it would eliminate the very serious economic threats to the remanufacturing industry by enabling the remanufacturing industry to free up capital to allow for the updating and purchase of additional and more efficient equipment.

Under the Energy Credit Act of 1978 recycled materials are eligible for the tax credit but remanufactured products are not. It is submitted that this exclusion does not take into account the particular characteristics of the automotive remanufacturing industry. When applied to the remanufacturing process, the term "recycling" has an important meaning different than the common practice of melting metals and pouring new ingots.

In the automotive industry, "recycling" means to sustain the original properties of the component and to restore the original quality and performance by necessary remanufacturing operations. Automotive remanufacturing can best be described as the science and industry of reclaiming and recycling critical metals. As such it makes a significant contribution toward the conservation of our natural resources and a more efficient use of energy while providing economic benefits to the public. Tax incentives such as we are now recommending will allow the remanufacturing industry to have capital to expand and increase that contribution.

Thank you for the opportunity to express our views. I'll be glad to attempt to answer any questions.

William G. Smith

ENERGY SAVINGS

Remanufactured Engines, Transmissions, Small Parts and Tires

Engines produced by Production Engine Rebuilders	412,000
Engines produced by Jobber and custom machine shops	1,872,000
Total remanufactured engines per year	2,284,000

Total weight of reusable parts: i.e., block heads, crankshaft, camshaft and rods:

4 cyl	292,352	@	249 lbs	72,795,648
6 cyl	431,676	@	351 lbs	151,518,276
V8	1,559,972	@	405 lbs	631,788,660

Total engine weight	856,102,584 lbs	
Total weight of small parts rebuilding, including transmissions	2,560,598,000 lbs	
Total weight of remanufactured parts, engines and transmissions per year.		3,416,700,584 lbs

It takes 6,000 BTU to melt one pound of iron. Melting 3.5 billion pounds of cast iron and steel would require 20.5 trillion BTU. To produce 20.5 trillion BTU, one of the following energy sources would be consumed:

224 million gallons of propane
150 million gallons of fuel oil
20 billion cubic feet of natural gas
804 thousand tons of soft coal
150 million gallons of crude oil

Savings of crude oil by recapping tires per year.

12 million truck tires @ 22 gals of crude	264 million	
34 million pass. tires @ 5.6 gals of crude	190 million	
Total savings of crude oil in gals from recapping	454 million	
Total savings of crude oil by remanufacturing	150 million gals.	
Grand total savings of crude oil by recapping and remanufacturing per year.		604 million gals

Statement by
Congressman Cec Heftel
to the Senate Subcommittee on
Energy and Agricultural Taxation

October 19, 1981

Mr. Chairman:

I am pleased to present this statement in support of S. 750, the Industrial Energy Security Tax Incentives Act of 1981. Mr. Chairman, I would like to take this opportunity to commend you for the leadership you have exhibited in bringing this matter to the attention of the Congress. As you know, I have introduced the companion bill to S. 750 on the House side, along with Congressman Ottinger of New York and numerous other Members of the House.

Mr. Chairman, S. 750 would increase the available tax credits for industrial conservation projects. Under the proposal, the credits for "specially defined" and "alternative" energy property, "recycling equipment," and "cogeneration property," as defined in the Energy Tax Act of 1978 and amended by the Crude Oil Windfall Profit Tax Act of 1980, would be increased from 10 to 20 percent. A fifth category of qualified property to be known as qualified industrial energy efficiency property would also be established. Adding this fifth category of property would expand the range of projects eligible for conservation incentives. The credit for this property would generally be 20 percent.

However, this credit would be subject to several limitations. First, the credit for qualified industrial energy efficiency property would be limited to the lesser of 20 percent of qualified investment or $60 for each barrel of oil equivalent (BOE) saved in 1 year by the investment based on pre-project levels of production. Second, no credit would be allowed for qualified industrial energy efficiency property if the credit otherwise allowable were less than $10 per BOE. These two conditions attached to the fifth category of qualified property are designed to limit the revenue impact of the bill and exclude from the incentive program those modifications or replacements which are already sufficiently attractive from a financial point of view. Finally, each modification to an industrial process would have to achieve an aggregate annual decrease in energy consumed by such process of at least 1,000 barrels of oil equivalent.

Mr. Chairman, since American industry consumes almost 40 percent of all energy utilized in the country, I believe that an aggressive energy conservation effort in the industrial sector could take our Nation a significant part of the way down the road to energy independence. It is incumbent upon us to realize this conservation potential.

Mr. Chairman, the United States is faced with an energy problem of unprecedented dimensions. Energy now has a direct and significant impact on our foreign policy and our domestic economy. It is essential then that strategies be devised and implemented to deal with the energy problem in the short term--over the next decade--and in the long term, in ways that will not have adverse implications for the Nation's economy and productivity. The current oil surplus in world markets and the pricing uncertainty within OPEC should not be used to hide this nation's continuing vulnerability to sudden oil shortages and price increases.

The need for an increased industrial conservation effort is clear. The widespread use of alternatives such as solar energy and synthetic fuels in the industrial sector remains at least a decade away. The role to be played by nuclear power remains uncertain, particularly in the short term. Increased production of domestic oil, natural gas and coal must and is being encouraged. However, with our proven domestic oil reserves on the decline and with increased coal production posing environmental risks, other short-term strategies must be utilized. Conservation technologies are ready now, are domestic, produce little, if any, pollution, and offer us perhaps our best short-term solution to the energy crisis.

We are reminded by the authors of Energy Future, Professors Robert Stobaugh and Daniel Yergin, that: "conservation is no less an energy alternative than oil, gas, coal or nuclear. Indeed, in the near term, conservation could do more than any of the conventional sources to help the country deal with the energy problem it has."

Specifically, industrial conservation efforts using existing technology and requiring moderate capital can produce energy savings of about 10 percent in many of our most energy intensive industries. Energy conservation projects in this category include improved operating procedures and comparatively minor modifications to existing equipment. As the price of energy has risen, projects to achieve this first level of energy savings have increasingly become cost effective. In many industries, then, these "first level" conservation savings have been and are being realized.

Mr. Chairman, it is my opinion that significant "second level" conservation savings in the neighborhood of an additional 15 to 20 percent can be achieved with existing technology.

However, projects to achieve these savings require large capital outlays. To date, substantial "second level" energy savings have not been achieved in the industrial sector. Some of our most energy intensive industrial firms simply may not have the capital necessary to undertake significant conservation projects. For other firms where energy is not a significant cost, energy saving, whether by housekeeping or by investment, may remain a low priority concern. I am concerned that even with the business investment stimulus provided under the President's economic recovery program, industrial energy conservation investments still may not receive the priority they deserve. However, conservation must be elevated in priority throughout our industrial sector. It is these "second level" conservation projects which we hope to stimulate with this incentive proposal.

Mr. Chairman, it is my feeling that S. 750 will provide the necessary incentive for those industries which would ordinarily not undertake industrial conservation projects. At the same time, S. 750 addresses the cash flow problem which prevents many industries from investing in significant conservation projects.

It is clear that the barriers to industrial conservation are in some cases economic and in some cases institutional. What S. 750 accomplishes is to give energy conservation the visibility it deserves as a significant alternative energy source. By addressing the barriers which have inhibited industrial energy conservation in the past, hopefully this legislation will chart a new course for energy conservation in the future.

Thank you, Mr. Chairman, for the opportunity to present this statement.

STATEMENT
OF THE
AMERICAN GAS ASSOCIATION
BEFORE THE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
OF THE
COMMITTEE ON FINANCE
U.S. SENATE
ON THE INDUSTRIAL ENERGY SECURITY TAX INCENTIVES ACT (S.750)

INTRODUCTION

Mr. Chairman and Members of the Subcommittee:

The American Gas Association (A.G.A.) is a national trade association, which represents nearly 300 natural gas distribution and transmission companies serving over 160 million U.S. consumers in all 50 states. A.G.A. member companies account for approximately 85% of the annual gas utility sales in our nation.

Natural gas currently provides about 27% of the energy consumed in the U.S. Gas is used in about 55% of all residential and commercial establishments in the U.S., and provides about 40% of the energy consumed by U.S. industry. The nation's gas supplies are derived almost exclusively from domestic sources, and gas provides two and one-half times as much end use energy to consumers as electricity.

A.G.A.'s members have a direct and vital interest in the efficient use of natural gas. Therefore, A.G.A. strongly supports cogeneration as a means of reducing total U.S. energy consumption through the productive use of what would otherwise be wasted energy.

Natural gas is the fuel of choice for most cogeneration applications. It is clean, easy to use, and the gas-fired cogeneration equipment is currently available. In contrast, equipment which does not use natural gas (or an oil-derived product) is not generally available. In addition, cogeneration using alternative fuels has associated environmental and fuel handling costs well beyond those of gas. The current cogeneration tax credit does not, therefore, provide an effective incentive for cogeneration. In this regard, Subcommittee Chairman Malcolm Wallop (R-WY) should be congratulated for his introduction and support of the Industrial Energy Security Tax Incentives Act of 1981 (S.750). The provisions of this bill permitting gas- and oil-fired cogeneration equipment to qualify for tax credits on an equal basis with alternatively fueled cogeneration equipment are commendable. In addition, we commend Senator Wallop and co-sponsors for their treatment of public utility property which, under this bill, would clearly qualify for the cogeneration tax credit on an equal basis with nonutility investors.

A.G.A. supports the generic concept of using tax credits to provide an incentive for development of high-efficiency technology to the extent that such credits may be the most cost-effective approach. This approach can be particularly appropriate in an economy where high interest rates and an increasing need for new capital equipment can create serious cash-flow problems which must be overcome. While alternative tax policies may also be viable, we believe that the approach of increasing the credit from 10% to 20% and permitting the credit to be taken through December 1986 is a valid approach and warrants additional examination as to the costs and benefits involved.

The Gas Supply Outlook and Tax Policy

When Congress passed the Crude Oil Windfall Profit Tax Act of 1980, which created the cogeneration tax credit, there was a great deal of concern about supply of natural gas. Natural gas-fired cogeneration equipment was therefore excluded from qualifying for the credit. The natural gas supply outlook, however, has brightened considerably.

Congress implicitly recognized the improving gas supply outlook by recently repealing the restrictions on gas use by existing powerplants in section 301 of the Powerplant and Industrial Fuel Use Act -- provisions which would have required existing powerplants using natural gas to convert to other fuels by January 1, 1990.

Given the improving gas supply outlook, A.G.A. believes that no justification can be made for continuing the tax bias against natural gas-fired cogeneration equipment. A.G.A., therefore recommends:

- Cogeneration equipment using gas as a primary fuel should receive the same benefits available to cogeneration equipment which uses other fuels. The choice of fuels should not be biased by unequal tax treatment.
- The definition of qualified industrial energy efficiency property (QIEEP) in section 3, which creates I.R.C. Section 48(q)(1)(c), should be modified. In the bill as currently introduced, a gas based system could qualify only if there were a net savings of oil or gas per unit of output. By contrast, systems fired by other fuels must show only a net total energy savings of 1,000 barrels of oil equivalent daily. A.G.A. believes that if equipment complies with the total energy savings standards required to qualify as QIEEP, the level of gas use should not be important. Total energy savings should be the criterion for any system, regardless of fuel.

- Section 3, creating I.R.C. Section 48(q)(7)(B)(ii), which requires energy savings to be disregarded if the result of "substantial changes in the character of either the output or the input of the facility" should be clarified. It is unclear whether this provision is intended to exclude energy savings resulting from economics of scale or whether the provision provides a tax bias against conversion from one fuel to another. The tax code should not be used to impede conversion from one one fuel to another.

Tax Credits for Public Utility Property

A.G.A. believes that if national policy is to encourage investment in equipment and processes that save energy it makes no sense to exclude public utilities from the available incentives. This is especially true for equipment and processes that are complex and which require utility expertise to prove economic viability prior to general industry acceptance.

"Public utility property", under current law, is prohibited from qualifying for the cogeneration energy tax credit. It appears, however, that cogeneration equipment will generally not be defined as "public utility property," so long as the cost of the equipment is not put in the utility's rate base for purposes of rate-of-return pricing. Since the return on investment in cogeneration equipment is to be derived from sales of electricity at "avoided cost", as defined in the Public Utility Regulatory Policies Act of 1978 (Pub.L. 95-617), and not on a rate-of-return basis, cogeneration equipment will seemingly not be "public utility property" even if it is owned by a public utility.

Although current law is therefore apparently responsive to A.G.A.'s concern, the language is still sufficiently ambiguous to justify efforts to avoid possible alternate interpretations of "public utility property." Consequently, A.G.A. supports the provision in S. 750 which explicitly permits public utilities to qualify for the cogeneration tax credit.

A.G.A., however, is disappointed that S.750 excludes public utility property from qualification as specially defined energy property, qualified industrial energy efficiency property (QIEEP), and associated property. We recommend that public utility property be given equal treatment with nonutility owned property. We also recommend that provisions in current law which discriminate against public utility property be re-examined. These provisions prohibit public utility qualification as alternative energy property, solar and wind energy property and recycling equipment.

Other Provisions

- A.G.A. recommends that further clarification be made in regards to the incremental cost rule in Section 4(i), adding I.R.C. Section 48(l)(19). This section, particularly in its definition of the "energy component", leaves a great deal of discretion to the I.R.S. I.R.S. regulations have been very restrictive toward tax credits. To ensure Congressional intent is not thwarted, "energy component" and "energy related cost" must be more precisely defined.

- A.G.A. recommends that property associated with public utility property qualifying for the tax credit should be specifically identified as being eligible for the energy tax credit. As S.750 is currently drafted, "associated property" is treated as QIEEP. Since "public utility property" is excluded from the definition of QIEEP, it is unclear whether property associated with a qualifying public utility-owned cogeneration facility will be eligible for the credit.

- A.G.A. recommends that consideration be given and cost/benefits assessed for allowing new facilities to qualify for the cogeneration energy tax credit on an equal basis with existing facilities.

Conclusion

A.G.A. recognizes the exigencies of the current fiscal situation and, therefore, our recommendations are made in the spirit of equal treatment under the tax code and can be summarized as follows:

- Gas-fired equipment should be accorded the same treatment as equipment using other fuels. To the extent that high efficiency equipment is to be encouraged by tax credits, tax benefits should be meted out even-handedly and without regard to the type of fuel used in the equipment.
- To the extent that investment in energy efficient technologies is to be encouraged, both public utilities and nonutility investors should have the same opportunity to obtain energy tax credits for their investment.

The A.G.A. believes that a policy of even-handedness will be directly beneficial to gas customers throughout the nation. Cogeneration is a technology which can have far reaching effects through its more efficient use of input energy. Cogeneration tax credits could be a valuable tool to strengthen the conservation ethic in the U.S.

Atlantic Richfield Company
Comments on S. 750
"Industrial Energy Security Tax Incentives Act of 1981"

The proposed Senate Bill 750, the "Industrial Energy Security Tax Incentives Act of 1981," introduced by Senator Malcolm Wallop is an expanded version of S. 3006 which he introduced in the 96th Congress. It provides for an increase in the amount of energy investment tax credit which would be available for certain industrial energy properties, expands the types of properties eligible for the credit and extends the length of time the credit would be available.

Passage of S. 750 would promote use of domestic resources and reduce dependence on foreign oil. This is consistent with Atlantic Richfield Company's long-held position encouraging conservation and energy self-sufficiency. It would also correct a number of problems that presently exist with the current energy tax credit provisions of the Energy Tax Act and the Crude Oil Windfall Profit Tax Act.

The following comments are directed at certain provisions contained in S. 750 which we feel are particularly helpful toward achieving the goals of the bill. Some recommendations are offered to minimize potential problems with interpretation of the provisions.

Section 3. Qualified Industrial Energy Efficiency Property Treated as Energy Property

1. Qualified Industrial Energy Efficiency Property

Proposed

Qualified industrial energy efficiency property is a proposed new category of energy credit property. In general, this type of property must be used as part of a modification to an existing industrial or commercial facility (including replacement of a process at a facility) which

1. results in the use of less energy per unit of output,
2. results in an aggregate annual decrease in energy consumed of not less than 1000 barrels of oil equivalent (BOE), and
3. does not increase the total amount of oil and natural gas consumed per unit of output.

Comments:

The concept of stimulating energy efficiency in the industrial sector can, when implemented, contribute to the overall reduction in oil imports and an increase in industrial productivity. We support creation of this new category of energy property. Our greatest concern with this bill, however, relates to how this category is defined.

The requirement that property be considered Qualified Energy Efficiency Property (Q-E-E) only if the result is a savings of not less than 1000 BOE each year means that the property must result in a savings of 5,800 million Btu's annually. A savings of this magnitude represents more than a one percent reduction in total facility energy use at all but approximately 15 locations within our entire Corporation. Since very few projects, even in very large energy consuming facilities, can make that impact on energy consumption, this requirement effectively eliminates this new category. Average energy consuming facilities within the U.S. would have no opportunity to qualify.

In view of this, we propose the elimination of the 1000 BOE savings requirement. This would permit smaller manufacturers to take advantage of the credit. No alternative limitation is felt necessary since the credit allowed would still be limited by the adjusted BOE cost calculation (see below).

2. Reduction of Credit

Proposed

The 20% tax credit for Q-E-E property is to be reduced and the excess credit recaptured if the cost of the actual energy savings is excessive or where the energy savings would warrant investment without regard to tax credit. To determine the energy credit ultimately allowed, the energy consumption per unit of output for a 12-month period following modification is to be compared with the energy consumption for a similar period prior to modification. The full credit would be available if the BOE cost of the property falls between $10-$60. A reduced credit is allowed if the BOE cost is less than $10 and an alternative credit if the BOE cost is more than $60.

Comments:

a. Reduction of Credit

(1) The expanded BOE range of $10-$60 versus $11-$55 that was in last year's proposal, S. 3006, would in and of itself not provide any additional incentive. The high end of $60 versus $55 relates to projects that would have less than a 3% rate of return (ROR) after taxes and, therefore, would not receive funding anyway. However, this year's bill is substantially better since investments in qualified energy efficiency property that result in an adjusted BOE cost below $10 would receive a reduced tax credit, rather than no credit at all. This appears to answer the objections raised in connection with S. 3006 that investments would be "gold plated" in order to cross the threshhold BOE cost of $11 (in S. 3006) and qualify for the credit.

(2) The definition of "reduced credit amount" is somewhat confusing because the term "BOE cost" is used, whereas the previously defined term in proposed Section 48(q)(6)(A) is "adjusted BOE cost." For consistency and clarity we recommend that the term "adjusted BOE cost" be inserted as follows:

"(C) Reduced Credit Amount -- the term 'reduced credit amount' means the energy investment credit determined as if the energy percentage equaled the percentage which bears the same ratio to 20 percent as the adjusted BOE cost of the property bears to $10."

b. Time of Application of Limitations on Amount of Credit

(1) As the bill is currently worded, the final tax credit allowed (reduced credit amount, 20% or alternative credit amount) can only be determined after construction has been completed and the property in operation for 12 months. However, it is unclear in this paragraph that initially the full 20 percent credit should be taken in the year qualified industrial energy efficiency property is placed in service. We propose the following language be added (as underlined) to proposed Section 48(q)(9)(A) as follows:

> "(A) In General - The provisions of paragraph (5) and (8) shall not be applied in the determination of the qualified investment of qualified industrial energy efficiency property under Section 46(C). The provisions of paragraphs (5) and (8) shall be applied as of the close of the recomputation period."

(2) In the definition of "annual BOE's saved," the average number of BOE's utilized per unit of output is to be measured during a "representative 1-year period before the use of the property commences" and again during "any representative 12-month peiod occurring within the recomputation period" following the modification. The recomputation period is defined in Section 48(q)(9)(B) as the period beginning on the date on which the QEE property is placed in service and ending on the "last day of the first taxable year beginning more than 180 days after such date." The initial 12 month period referred to in Section 48(q)(6)(B)(i) and "such 1-year period prior to the modification" in Section 48(q)(6)(B)(ii) are unspecified.

We feel that this prior 1-year period should remain unspecified by the legislation, except possibly to mandate the same representative 1-year period in both paragraphs and that the period be within five or ten years before the date of the modification. Variables such as economic conditions, strikes, and unit shutdowns can drastically affect the BOE for a property. Retaining a degree of flexibility permits the selection of an operating period which would not reflect distortions caused by such anomalies.

Section 4: Amendments Relating to Energy Property

1. Alternate Substances

Proposed

The category of alternate substances has been expanded to include petroleum coke, petroleum pitch, synthetic fuels and any other product produced from any alternate substance.

Comments:

The Department of Energy has already recognized the value of petroleum coke as an alternate substance and is encouraging its use by specifically including it in the definition of "alternate fuel" in the regulations implementing the Powerplant and Industrial Fuel Use Act (FUA). We feel that tax legislation should be consistent with FUA legislation and regulations, as it would be in S. 750.

Due to expected reductions in demand for residual fuel oil and since the percentage of heavy crude oil in available supplies is increasing, petroleum coke production will increase in the future. If the use of coke as a fuel is encouraged through tax credits, it could find a role as a displacement fuel for oil or natural gas. These fuels would then be available for other purposes such as upgrading to transportation fuels and use in residential heating. We feel the use of petroleum coke in this country should be encouraged in order to contribute to the efforts to reduce our dependence on foreign oil and to help our balance of payments.

2. Primary Fuel

Proposed

An alternate substance would be considered the "primary fuel" if the alternate substance accounts for more than 50% of the Btu's used by any item of alternative energy property. Electricity could also satisfy the primary fuel requirement (1) if it is generated primarily from an alternate substance or (2) if it is purchased and reduces the need for on-site use of oil and gas, and more than 50% is generated from an alternate substance.

Comments:

The provision that for an alternate substance to be considered the "primary fuel" it must account for more than 50% of the Btu's used by any item of alternative energy property precludes the use of fuels such as coal-oil mixtures (COM).

COM is viewed as an important transition fuel between petroleum and coal and holds potential for reducing the quantity of oil, and possibly gas, used in boilers. In addition, the use of COM would reduce boiler fuel costs. As in the case of petroleum coke, use of these fuels should be encouraged in order to reduce our dependence on foreign oil.

The Btu ratio of coal to oil in COM is about one to three. Because of the physical characteristics of the materials, they cannot be combined in a ratio such that the coal constituent would provide more than 50% of the Btu content of the fuel. In a normal mixture using one-third coal by Btu content, a fuel is produced which is a solid at room temperature, especially if a heavy residual fuel oil constitutes the remaining two-thirds.

U.S. utilities are currently burning as much as 1.5 million barrels per day of fuel oil for the generation of electricity. Of this amount, roughly two thirds is consumed on the East Coast, primarily in the northeastern sector and in Florida. Most of the remainder (approximately 460 thousand barrels per day) is utilized in California. Of that portion consumed in the northeast, approximately 45% (32,000 megawatts out of a total of 70,000 megawatts) is fired in units originally designed to use coal. In many cases these "coal designed" units cannot be economically reconverted to coal firing capability because of space and environmental limitations and thus can only economically work out their remaining productive lives on liquid fuels.

Hence, there is significant potential for the use of COM, and therefore a reduction in oil use, in the northeastern U.S. in both units designed for coal firing and in those designed for oil firing.

In order to encourage the increased usage of our abundant domestic resource-coal, provision should be made for COM to qualify as an alternate substance, either by listing it specifically or by making COM an exception to the Btu requirement for a primary fuel.

3. Specially Defined Energy Property

Proposed

The specially defined energy property (S-D-E) category has been expanded to include industrial insulation; industrial heat pumps; modifications to burners, combustion systems, or process furnaces; batch operations; conversion equipment; product separation and dewatering equipment; and fluid bed dryers and calciners.

Items can be added to the list, not only by the Secretary of Treasury, in a manner specified by regulations, but also upon the recommendation of the Secretary of Energy if there are no generally available and substantial Federal subsidies for such property. The recommendation is to be acted upon within 6 months after receipt.

Comments:

Addition of the new properties to the specially defined energy property category and the proposed additional procedure by which other new properties could be included in this category could, if properly administered, provide a means to achieve a fairly rapid determination of the eligibility of property not listed for the credit. This would be helpful in cases where there is a question of installing energy saving equipment which would be marginally economical without the credit, or where planning or design of equipment would be unduly retarded.

4. Cogeneration Equipment

Proposed

The requirements for qualifying property as cogeneration equipment have been modified (1) to eliminate the reference to industrial or commercial facilities, (2) to define the term "facility" to include industrial or commercial operations at the same geographic location, (3) to allow the use of alternate substances, such as petroleum coke, as well as oil and gas, (4) to eliminate the public utility limitation provided the requirements of paragraphs (17)(C) and (18)(B) of Section 3 of the Federal Power Act are met and (5) to allow the entire cogeneration facility, including the associated property reasonably necessary to achieve the energy savings, to qualify for the credit. In addition, the proposed definition recognizes the generation of mechanical shaft power in addition to electric power.

Comments:

Extension of the energy tax credit provisions to cogeneration equipment should further encourage the design and use of such systems. This would be particularly desirable.

The Senate originally intended for cogeneration equipment to be eligible for the energy investment tax credit through the Energy Tax Act. The Senate Report on its bill, S. 2114, recognized (on p. 21) the need to move in this direction when it stated that

"About three-quarters of the energy used by industry actually performs useful work; the rest is waste heat. In addition, two-thirds of the energy used in electricity generation and distribution is wasted. In 1975, waste heat from these sources was equivalent to over 7 million barrels of oil per day.

One way to use this waste heat is through cogeneration, the simultaneous production of process steam and electricity. Cogeneration provided 15 percent of U.S. energy as recently as 1950, but now contributes only 4 percent."

The proposed definition recognizes that mechanical cogeneration in addition to electrical cogeneration is an efficient use of energy. FERC has also recognized the importance of mechanical cogeneration and adopted a rule on October 23, 1980, which exempts mechanical cogeneration facilities from all incremental pricing provisions of the Natural Gas Policy ACt of 1978. In that rulemaking, Federal Energy Regulatory Commission (FERC), as quoted below, recognized the inequity of distinguishing between electrical and mechanical cogeneration.

"The incentive provided through the exemption of cogeneration from incremental pricing is intended to promote the efficient use of energy by cogeneration facilities. However, as noted, under the existing rules, only those cogeneration facilities which generate electricity are eligible for the exemption; those producing only mechanical power are excluded. Not only is this distinction inequitable, since energy resources may be conserved absent electrical generation, but it may create a significant incentive for needless capital investment. An industrial company with a need for mechanical power which could be obtained through cogeneration might have an economic incentive through lower natural gas prices to cogenerate electrical instead of mechanical power. This electricity would, in turn, be used to power electric motors, which would be used to drive the machinery. Thus, several intermediate steps would be taken to obtain mechanical power.

"The expense of installing the generators and motors would be needlessly incurred, since the cogeneration prime mover could directly supply the required mechanical power. Moreover, the intermediate conversion to electricity would result in energy losses since motors and generator are always less than perfectly efficient. By making mechanical cogeneration facilities eligible for the exemption from incremental pricing, this rule would remove this incentive to install unneeded equipment."

Section 5. Associated Property

Proposed

The proposed legislation provides for another new category called "associated property" to be eligible for the energy tax credit. "Associated property" is defined as any property associated with alternative energy property, specially defined energy property, recycling equipment, or cogeneration equipment which is necessary for the operation or installation of these properties. Furthermore, these properties will be treated as qualified industrial energy efficiency property.

Comments:

It is unclear whether the associated property installed with the above categories is also subject to the complex calculations required for qualified industrial energy efficienty property. We feel that this provision should clarify the point that all property required for the installation and operation of the energy property should also qualify for the energy credit under the category of energy property it was installed in connection with, and not under a new energy category.

Gov't. Rels./Govt'l. Issues
EVB: 10/30/81

Testimony of T. E. Norton and James Bugden Co-Chairmen of the Government Affairs Committee, AMERICAN SUPPLY ASSOCIATION, before the Senate Finance Committee Hearings on S.750 and S.1288, October, 1981.

Mr. Chairman: The American Supply Association welcomes the opportunity to testify on S.750, the "Industrial Energy Security Tax Incentive Act of 1981" and S.1288, "The Commercial Business Energy Tax Credit Act of 1981."

The American Supply Association is the single national association representing plumbing - heating - cooling - piping wholesalers. The 1200 members of the Association are primarily small, family-owned wholesale distribution firms. Our members are located in all fifty states.

The Association is strongly supportive of the intent of both S.750 and S.1288 because both bills recognize the necessity of increased incentives for energy conservation in the industrial, commercial, retail and wholesale sectors.

The shortage of energy resources is not a problem which will go away in the years ahead. While we move forward in the search for additional reserves and the development of alternative energy resources, these efforts must be complemented with increased conservation of the energy currently available.

The decontrol of crude oil and the pending partial decontrol of natural gas will bring the cost of energy to a more natural market level. We agree that the resultant increased cost of energy will be a powerful incentive to conserve.

But increased energy prices are not the only solution. For the ASA members, their primary facility is the warehouse. The cost of energy is a major part of the overhead. There comes a point where a businessman faces consumption requirements that can no longer be cut back solely because of cost. At that point, he needs to be able to invest in the equipment or procedures which cut down the amount of energy used.

Tax incentives for energy conservation will make it more possible for the business owner, particularly the small owner, to afford the immediate investment in energy conservation.

The use of tax incentives for the homeowner or business owner are more practical steps toward conservation then are the jerry-rigged, regulation-ridden conservation program of the previous administration - RCS, CACS, BEPS, etc.

Expanded tax incentives for energy conservation will also provide an additional stimulus to those companies with the capability of developing innovative energy conservation equipment and measures. This emerging industry is a critical part of this country's energy plan.

Specifically, we urge your support for:

1) Extending the eligibility for the energy credit to include those items installed to reduce energy consumption in any existing retail industrial or commercial process, activity, facility building or equipment.
2) Include "insulation property" to the list of business energy tax credits.
3) Expand the list of specifically defined energy property to include those items detailed in both bills.
4) Expand the definition for alternative energy property, recycling equipment and co generation equipment.

With S.750 and S.1288 as the basis, we urge the Committee to take action to increase energy conservation incentives in the industrial, commercial, retail and wholesale sectors and to ease the restrictions in the current law as passed in the Energy Tax Act of 1978.

Thank you again for this opportunity and we stand ready to provide the Committee any additional information required.

Brick Institute of America 1750 Old Meadow Road, McLean, Virginia 22102 **Phone: 703-893-4010**

October 28, 1981

The Honorable Malcolm Wallop
Committee on Finance
Subcommittee on Energy
 and Agricultural Taxation
2227 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator Wallop:

I would be grateful if the following comments would be included in the hearing record of October 19, 1981 on Industrial and Commercial Energy Tax Credits.

The Brick Institute of America (BIA) is the national trade association for manufacturers of brick and other structural clay products. Our membership represents approximately 83% of the annual production of brick in this country.

The hearings on legislation to expand and clarify existing energy tax credits are especially timely in view of the Administration's recent proposals to discontinue business energy tax credits already enacted by Congress. Energy tax credits are essential in furthering the drive to decrease America's dependence upon foreign oil and to provide needed incentives for future energy savings. Further, such credits will offer a valuable opportunity to increase national employment, investment and growth during an otherwise depressed economic period.

BIA is particularly supportive of the provisions in S. 750 which call for increasing the energy tax credit rate to 20 percent for alternative energy property; expanding and clarifying the definitions of property eligible for the credit; and extending the credit to qualifying energy efficient properties and practices. We feel that this legislation represents a constructive step forward in expanding the level and scope of business energy tax credits.

The original intent of the Energy Tax Act of 1978 was to provide incentives to U.S. industry to invest and produce energy efficient products and designs. Unfortunately the current law is restrictive and as a result of regulations by the Treasury Department insufficient energy tax credit incentives have been provided to the industrial sector. In addition, the deadline of December 31, 1982 compounds the difficulty of businesses considering energy efficient investments. This is especially so given the currently depressed market situation and the general unavailability of credit revenue.

Business investments in energy efficient plants and equipment must be increased sharply. The technology for these investments currently exists, however the shortages of investment capital remains a major deterrent to modernizing plants and equipment to save energy. At the present time, there is a significant amount of risk involved in investments in renewable energy and conservation projects, particularly when compared to other types of investment. BIA believes that the combination of the recently enacted Accelerated Cost Recovery System and expanded energy tax credits will be highly effective in stimulating those companies who would otherwise retain their present systems. Rewarding demonstrated energy savings through the tax system will prove an important stimulus for industrial conversion to energy efficient plants and machinery.

Although BIA's members are representative of the manufacturing community for which expenditures for energy represent a substantial portion of operating costs, our interest in this legislation goes beyond the manufacturing process. As substantial consumers and also contributors to production in the field of energy, we are aware of the need to expand national tax policy to include incentives for alternative energy production. We feel that such an integrated investment tax credit program is extremely critical to the nation. An effective national policy will increase investments in renewable energy sources rather than diminish them. A carefully designed program of limited but targeted Federal incentives will have a positive economic and energy impact and will contribute to America's energy independence through increased energy conservation and as a result, increased alternative energy production.

Finally, we would like to note that BIA has been a leader among the industrial activists seeking to stimulate national economic growth and increased energy efficiency using passive solar and conservation techniques. We see S. 750 as an important weapon in the Federal energy arsenal and are anxious for its adoption.

Should the Committee wish further information or assistance, please feel free to contact either Margaret Morris or Joel Stronberg at 893-4010.

Sincerely,

Margaret M. Morris

Margaret M. Morris
Government Relations

MMM:mm

STATEMENT OF PHILIP P. FRIEDLANDER, JR.
EXECUTIVE VICE PRESIDENT
NATIONAL TIRE DEALERS AND RETREADERS ASSOCIATION

Before

THE SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
Of
THE COMMITTEE ON FINANCE
Of The
UNITED STATES SENATE

October 19, 1981

STATEMENT OF PHILIP P. FRIEDLANDER, JR.
EXECUTIVE VICE PRESIDENT
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Before

THE SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
Of
THE COMMITTEE ON FINANCE
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UNITED STATES SENATE

My name is Philip P. Friedlander, Jr., Executive Vice President of the National Tire Dealers and Retreaders Association, a national nonprofit trade association representing approximately 5,000 independent tire dealers and retreaders located in fifty states who are engaged in the wholesale and retail distribution of automobile and truck tires, the retreading of tires and the sale of related products and services.

I appear before you today in strong support of S. 750, the Industrial Energy Security Incentives Act of 1981. In introducing that legislation, Senator Wallop invited businesses to review the proposed language intended to encourage energy-saving investments and to make appropriate recommendations to aid the Senate Finance Committee in formulating the most constructive approach possible. The proposed legislation would amend existing law to broaden the definition of recycling equipment. NTDRA agrees with the Department of Energy when that Federal regulatory agency defines the retreading of tires to be the most obvious form of tire recycling.

Because S. 750 does not specifically define the retreading of tires as the recycling of tires, NTDRA supports the defining and inclusion of retreaded tires in this program for the following reasons:

(1) Tire retreading recovers great amounts of solid waste.

(2) If applied to retreading equipment, the proposed investment tax credit would have a negligible effect on the Treasury.

(3) Both the Department of Energy and the Environmental Protection Agency have defined the retreading of tires to be the recycling of tires.

(4) The Department of Energy and the United States Congress recognize a need to stimulate the retreading industry.

(5) Tire retreading is a long-standing recycling industry, conserving oil and rubber.

(6) Retreading represents a practicable and meaningful way that small business people can aid the country by undertaking a major recycling program.

(7) Tire retreading recovers substantial amounts of rubber polymer.

(8) Pyrolysis and cryogenic grinding of tires would qualify for the investment tax credit, indicating that tires are recognized as recyclable.

Each of these points is discussed below:

1. Tire retreading recovers great amounts of solid waste.

Roughly 175 million new tires and 50 million retreads were sold in the replacement tire market in 1979. That means approximately 225 million worn tires were taken out of service and replaced with either a new or retreaded tire. In addition, new cars, trucks, and buses, were equipped with about 62 million new tires in 1979 -- 51 million passenger tires and 11 million truck-bus tires. On average, scrapped automobiles amount to about 70 percent of those sold, and scrapped trucks and buses amount to about 40 percent of sales. Therefore, about 36 million passenger tires and 4 million truck-bus tires were taken out of service on scrapped vehicles. In total, approximately 260 million tires were potential candidates for disposal as solid waste. One can assume that 40 million to 50 million of them will be retreaded -- 15 percent to 19 percent. An additional

10 to 15 percent of the worn out tires will be used for other productive purposes such as reclaimed rubber for recycling into new rubber products, fuel, breakwaters and artificial reefs, dock bumpers, play ground equipment, roadside impact absorbers, and construction materials. The remaining 70 to 75 percent of the worn out tires, about 180 million, must be disposed of in non-productive ways -- mainly in landfills. Based on our knowledge of the industry, we estimate oil consumption at about 25 gallons per hundred weight of tires produced -- about 20 gallons for the materials and five gallons in the manufacturing of tires. The total weight of the 180 million tires which were non-productively disposed of in 1979 was approximately 7 billion pounds, representing the consumption of 1.75 billion gallons of oil -- 40 million barrels. Forty million barrels of oil were simply thrown away. This solid tire waste must be recycled.

The 650 million plus pounds of tread rubber consumed in the production of the 50 million retreads sold in 1979 provided the equivalent service of 2.3 billion pounds of new tires. At 20 gallons per hundredweight of tires, the oil savings from raw material production alone was 330 million gallons -- more than 20 thousand barrels per day. Additional energy savings are realized during the manufacture of retreads versus new tires. With the current product mix of passenger, truck and other retreads, the average oil savings in raw materials alone for a retread over a new tire is about seven gallons per tire -- a 70 percent savings. Retreading is recycling of a solid waste; it saves energy; and it deserves consideration as a recipient of the investment tax credit proposed in S. 750 to the recycling industry.

2. If applied to retreading equipment, the proposed investment tax credit would have negligible effect on the Treasury.

Industry figures reveal that approximately $30 million worth of retread equipment was purchased in 1979. Thus if retreading had been defined as recycling under the proposed legislation, it would have had a revenue effect on the Treasury of $6 million.

3. Both the Department of Energy and the Environmental Protection Agency have defined the retreading of tires to be the recycling of tires.

NTDRA concurs with the findings and philosophy of the United States Department of Energy in its recently completed final report, Industrial Recovered Materials Utilization Targets for the Rubber Industry, that "retreading is the most obvious form of tire recycling" Book II (p. II-55). The document was prepared by Hittman Associates, Inc. under the direction of the Office of Industrial Programs, Office of the Assistant Secretary for Conservation and Solar Energy, United States Department of Energy. To quote from the introduction, "The analysis and determinations indicated in this document have been used as a basis for recovered material utilization targets for the rubber industry. These targets are required to be established by Section 374A of the Energy Policy and Conservation Policy Act." Thus in the most recent instance in which a Federal agency has had to determine Congressional intent as it relates to retreading, it was clearly defined to be recycling.

The Environmental Protection Agency has long recognized retreading as an effective means of resource recovery and reducing solid waste. In 1973, EPA Contract No. 68-1-2906 was awarded to Smithers Scientific Services, Inc., to study the feasibility of requiring the federal government to use retreaded tires. The introduction to that report states:

> "More that five billion pounds of discarded tires end up as solid, municipal waste every year. This represents about 1.5 percent of the total solid waste disposed of annually . . . Obviously, one way to reduce

> this solid waste problem is to increase the percentage of tires being retreaded . . . A second benefit to be derived from the increased recycling of tires by retreading will be a reduction in petroleum consumption. Industry sources have estimated that it requires seven gallons of crude oil to make an average passenger tire. Five gallons as raw material feed stock, and two gallons to supply the required energy."

4. The Department of Energy and the United States Congress recognize a need to stimulate the retreading industry.

Because it sees the retreading process as a recycling process, the Department of Energy has taken an active leadership role to insure an increase in the number of retreaded tires. The retread industry has had to overcome numerous obstacles over the past few years, and industry figures project an 11.4 percent decrease in sales in 1980 as compared to 1979. In fact, the number of tires that have been retreaded has decreased yearly since 1974. In the DOE report previously mentioned, that agency calls on the government to provide the necessary stimuli to the retreading industry to satisfy a spurring demand for retreaded tires (pp. IV 1-IV 12). With the endorsement of the Treasury Department, Congress passed leigslation (H.R. 3317) and on December 24, 1980 President Carter signed into law (PL 96-598), a measure to aid the retreading industry. The new law provides for credits or refunds of the manufacturers' excise tax on tread rubber where tax-paid tread rubber is wasted in the retreading process, used in the retreading of tires that are exported, sold to state or local governments, sold to nonprofit educational institutions, or sold as supplies for vessels or aircraft. It also modified the statute of limitations so that a credit or refund of the tread rubber can be obtained for a period of one year after the warranty or guarantee adjustment is made. Senator Robert Dole (R-KS) said in the

Federal Register on October 1, 1980 that this legislation was needed to correct inequities imposed on retreaders to stimulate the industry (S 14033).

In general, financial incentives are the most efficient mechanism to stimulate a market. Retreading, particularly passenger tire retreading is an industry which is experiencing financial difficulties. Competition from new tire industry is the main cause. The availability of inexpensive bias-ply tires which compete directly with retreads has made an adverse impact on profits, reducing the amount of cash reserves that could have been reinvested for equipment. The investment tax credit would provide a new stimulus for reversing the recent downward trend in an energy conserving industry.

High and ever-increasing costs have also placed severe limitations on the growth of retreading. The foremost cost involves the collection of retreadable casings. As a result worn tires become a solid waste disposal problem rather than a partial solution to the problem of increased oil consumption.

The investment tax credit would help greatly to cover the retreader's increasing costs and help to make a struggling industry more attractive to investors. To determine the positive impact that the 10 percent credit allowed under the Energy Tax of 1978 could have had on the retread industry, NTDRA conducted a survey of 294 retread shops nationwide. It should be noted that as the new tire industry moves from a bias and bias-belted dominated market to an almost completely radial field, that retread equipment must be updated and replaced if it wants to move into the radial age. In response to the question, "would this incentive influence your decision to buy equipment this year," 204 respondents said yes, 6 said possibly, 11 said not this year, 8 respondents said that they had just bought equipment, and 65 said no. This confirmed the Department of Energy's belief that financial incentives would be the most effective way of stimulating this industry. The estimated total investment of the respondents who said that they would purchase new equipment totalled $8,932,500. If this statistic could be applied and extended to the entire industry, retreaders could be expected to invest approximately $121,480,000 making a $12,148,000 impact on the Treasury (based on the high industry figure estimate of 4,000 retreading shops). A second, but smaller, survey completed October 28, 1980 involving sixteen retread shops showed that nine retreaders would invest an average of $66,000 for equipment needed to recycle used radial tire casings. An updated survey conducted between October 1 and October 8, 1981 considering the credits allowed in S. 750 involving 10 retread shops indicated that all 10 retreaders need to invest in new equipment and that if the 20 percent investment credit was possible that the available investment would be $46,000.

5. Tire retreading is a long-standing recycling industry, conserving oil and rubber.

Tire retreading is a current and long-standing, as was seen especially during World War II, recycling industry. It is and has been a major program in the conserving of both oil and rubber. General industry figures reveal that in 1979 there were 50 million retreaded tires sold in the United States; of which 30 million were for passenger car use, 4 million for light trucks, 14 million for heavy-duty truck use and 2 million for aircraft, off-the-road, industrial-life trucks, motorcycles, and agricultural equipment. Sales of retreaded tires in 1979 were approximately $1.6 billion, and that figure is project to increase to $1.9 billion this year. The collective snow tire market for the last six years, as an example, may well have been greater for retreads than it has been for new tires. The investment credit could be a further stimulus in this area.

There exists a varying degree of acceptability of retreaded tires, as is the case with most recycled products. One out of five new replacement passenger car tires is a retread, while 98 percent of the world's airlines use retread tires. Nearly 60 million worn tire casings that could be retreaded are discarded every year.

There are numerous cost and energy savings by using retreaded tires. The price of a retreaded passenger vehicle tire is 50 to 70 percent of the cost of a new tire; and the savings with truck tires is even greater. Due to the oil savings and price differentials of new tires to retreaded tires, the industry saves the consumer one dollar for every one dollar of retreaded sales.

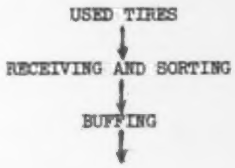
Based on the industry figure of 50 million tires, retreading conserves more than 400 million gallons of oil a year. The manufacturing of a new passenger tire consumes seven gallons of oil, on the average, while retreading the same size tire uses two and one-half gallons — a savings of four and one-half gallons per tire. Retreading a truck tire saves an average of about fifteen gallons of oil.

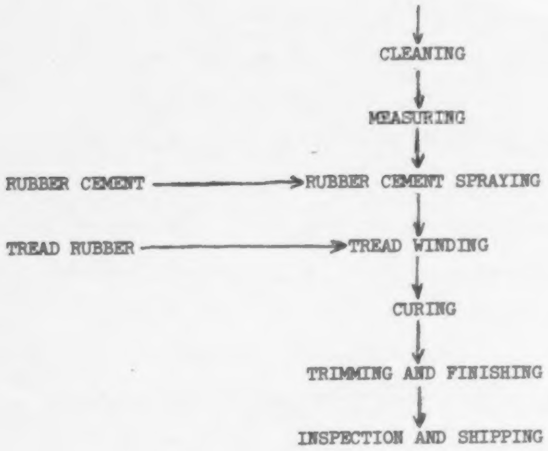
6. Retreading represents a practicable and meaningful way that small business people can aid the country by undertaking a major recycling program.

Retreading saves more energy, pound for pound, than reducing tire to powdered or crumb rubber. An analogy -- returnable soft drink bottles represent a sound recycling project. But instead of washing and refilling the bottles, the recycling process should be topulverize the returned bottles and manufacture new bottles from the recycled glass. It makes no sense to subsidize the recycling of worn out tires into the basic raw material while refusing to recognize the greater economic benefit to be realized by recycling tires as retreads. If the intent of the regulation is to reduce consumption of petroleum -- derived products and to provide incentives for expansions in recycling industries, the investment tax credit must be extended to the retread industry. It accomplishes the objective extremely well. Approximately 95 percent of the nation's retreading plants are owned and operated by small businessmen whose collective investment is roughly $1 billion. The remaining 5 percent of the firms are owned and operated by new tire manufacturers.

The retreading process in fact reverses part of the new tire manufacturing process by buffing the worn tread back to an optimum point safely above the body plies, but below the base where the new tread should begin. The recycling process then begins by vulcanizing new rubber to the prepared casing. When the tire tread is reduced to the Federally required tread base, that is 2/32 of an inch for passenger vehicle tires and 4/32 of an inch for truck tires, sound casings can be recycled, or retreaded, to perform and wear usually as good as a new tire.

A flowchart to highlight this process could look like:




CLEANING
MEASURING
RUBBER CEMENT
RUBBER CEMENT SPRAYING
TREAD RUBBER
TREAD WINDING
CURING
TRIMMING AND FINISHING
INSPECTION AND SHIPPING

The basic steps in retreading are:

(1) The selection of a satisfactory tire (casing) to be retreaded;

(2) Selection of the proper matrix in which to cure it;

(3) The preparation of the tire by buffing to accept the new rubber;

(4) Measure the buffed tire to assure selection of proper matrix;

(5) The application of the correct amount and size of new rubber;

(6) Selection of proper rim and curing tube; and

(7) Placing the tire in a proper mold or pressure chamber at the proper temperature and pressure for the correct amount of time to properly cure the tread that has been applied.

The recycling of tires is quite different from the remanufacturing of metallic automotive parts such as carburetors, valves, and distributors because materials used in tires are petrochemically based and are, in fact, oil derived.

Following important preliminary steps, the tread rubber is applied to the worn casings. This can be done either by the mold cure process, which involves applying tread rubber either manually or with an extruding device, or by the precured tread process, where the tread rubber is purchased as a precured strip of rubber with the tread design. A tread design is molded into the rubber during the mold cure process when the tires are cured, depending on tread thickness, from 45 minutes to two hours in individual molds at temperatures of 295 degrees to 310 degrees F. To provide molding pressure, air or steam is used at pressures upwards of 140 to 175 psi. Precured treads may be cured at lower temperatures, at about 200 degrees F., for hours in multiple unit heaters using a vacuum or pressure differential to adhere the tread to the casing. Retreading does not remove an energy product fromthe stream of recycling. It provides energy savings after which the solid waste (tire) can be recycled via cryogenic grinding or pyrolysis.

While an average new tire uses about 35 pounds of rubber, an average retread requires 12.5 pounds of new rubber compound, and could subsequently be driven for as many miles as a new tire. Truck tires are retreaded an average of 1.8 times, and many are retreaded five or more times. Commercial jet aircraft tires are commonly retreaded seven or more times, a noteworthy statistic in view of the high performance and safety demands placed on them.

Machinery used to sort, inspect, and manufacture retreads are energy property, i.e., it is recycling equipment as defined under the proposed legislation.

7. Tire retreading recovers substantial amounts of rubber polymer.

The Department of Energy projects over the next seven years a significant increase in the number of passenger tires to be retreaded. By applying the economic limitations to the maximum technical limits of 105 million passenger retreads by 1987, DOE projects that the feasible limit to retreading is 63 million passenger tires. Adding that figure to their projected number of truck and bus retreads totals a projected number of retreads to be 90.2 million. This results in a substantial amount of rubber polymer.

The amount of polymer that is recovered when a tire is retreaded is equal to the amount contained in the tire casing after buffing and before new tread rubber is applied. DOE's projection for retreading is based on the following formula:

$$\text{Target} = \frac{\text{Total Polymer In Retread Casings}}{\text{Total Polymer in New Tires} + \text{Total Polymer in Retread Casings} + \text{Total Polymer in Tread Rubber for Retreads}} \times 100$$

A passenger tire casing has 11.5 pounds of compound and a truck tire casing has 28 pounds of compound. Based on these figures and projections for 1987, 311, 816 long tons of polymer will be recovered.

8. Pyrolysis and cryogenic grinding of tires would qualify for the investment tax credit, indicating that tires are recognized as recyclable.

The "best" way to make use of a worn out tire casing is to retread it. The next economic benefit derived through retreading does not negatively affect the casing's value for future recycling processes. It can always be reduced to its raw material state at a later date. Pyrolysis and cryogenic grinding of tires are recognized as recyclable. Retreading embodies the spirit and intent of the proposed legislation and must also be considered a recycling process. The pyrolysis and cryogenic grinding industry does not have the means and organization for collecting scrap tires. The retreading industry does, with retread shops collecting and sorting worn tires -- retreading the good casing and stock piling the scrap tires for pick up by the pyrolysis and cryogenic grinding firm -- the two recycling industries fully complement one another. Without the retreading industry, the basic recycling industry which reduces tires to basic materials, would incur huge collection costs, this negative, partially or fully, the incentives provided by the investment tax credit.

SUMMARY

We urge the Finance Committee to specifically write into the bill a provision allowing for the extension of the energy investment tax credit for the purchase of retread equipment. We believe that this must be included in the bill to avoid questions of intent when the Treasury Department subsequently issues regulations. We suggest that a retreading provision could be included under Section 6, Amendment to Recycling Equipment Section of Existing Law, Subsection D, Certain Equipment Included.

Because tire retreading saves an enormous amount of oil and with justified incentives could save that much more through a recycling process, NTDRA strongly urges the Finance Committee, in drafting the final form of the legislation, to define the retreading of tires to be the recycling of tires thus enabling the nation's retreaders all of the benefits awarded recyclers under this positive and much needed legislation.

STATEMENT
OF
GEOPRODUCTS CORPORATION
ON S. 750
October 19, 1981

Mr. Chairman and members of the Energy and Agricultural Taxation Subcommittee, GeoProducts Corporation welcomes this opportunity to present its views on S. 750, legislation amending and expanding the energy tax incentives enacted in the Energy Tax Act in 1978.

GeoProducts Corporation was formed in 1975 to develop and utilize such alternate energy resources as geothermal heat and wood residues. The company has headquarters in Oakland, California, and is actively pursuing the development of alternative energy projects at a number of locations in the West.

In 1979, GeoProducts acquired exclusive rights to a new process for converting organic plant materials to ethanol. This process was developed by the Forest Products Laboratory of the University of California and uses neither food grains nor fossil fuels, as do other ethanol processes. Instead, it uses wood residues and agricultural waste to produce fuel-grade ethanol.

Also in 1979, GeoProducts signed agreements with the U.S. Forest Service, the California Department of Water Resources, and the U.S. Department of Energy to share in the funding of project development work for a hybrid geothermal-wood residue power plant. The plant is to be sited in Lassen County, California, (about 19 miles east of Susanville) and will produce 55 megawatts of electricity when completed in 1985. Wood residues collected within a 100 mile radius of Susanville will provide the fuel for the facility. Low temperature geothermal fluid will be used to dry the wood and also to preheat the boiler feedwater and combustion air. The dried wood will be burned in a conventional combustion process to produce steam for the generation of electricity. GeoProducts will own and operate the plant; the California Department of Water Resources will purchase up to 100 percent of the electrical output; and up to 30 percent of the electricity will be available for local use.

GeoProducts is presenting this statement to your Subcommittee for three reasons. First, we are alarmed at recent reports that the Administration is seriously considering the elimination or reduction of the alternative energy and conservation tax incentives established in 1978 with passage of the Energy Tax Act and reaffirmed with enactment of the Crude Oil Windfall Profits Tax Act in 1980. Second, we wish to point out certain inequities in the regulations promulgated by the Internal Revenue Service to implement the provisions of the 1978 Act relating to the investment tax credit for businesses. Third, and finally, we have a specific amendment to S. 750 to offer for your consideration.

Continued Support for the Energy Tax Incentives

As members of this Subcommittee are aware, the Administration is vigorously exploring ways to increase revenue without tampering with the tax cuts enacted earlier this year. One of the possibilities under active consideration by the Treasury Department is elimination or modification of the conservation and alternative energy tax incentives established in 1978. Should the Department recommend such changes, and Congress accept them, the effect on alternative energy companies would be nothing short of devastating.

Attracting equity capital for conventional energy projects is often a reasonably easy propostion. Convincing investors to provide risk capital for alternative energy projects is, on the other hand, significantly more difficult. Recognition by Congress of this reality resulted in enactment of the energy tax credits for homeowners and businesses.

The energy credits are working as anticipated; they are encouraging large-scale and geographically wide-spread commercial energy development. Companies, like GeoProducts, have made long-range decisions based on the expectation that the current tax incentives will be available at least through 1985. To change the ground rules at this time would only slow down the on-going efforts of individual companies to increase and diversify our domestic supplies of energy.

Therefore, we respectfully urge the members of this Subcommittee to join Senators Chaffee and Matsunaga in their drive to put the Senate on record in support of retaining the existing tax incentives for investments in conservation and renewable energy projects. The "sense of the Senate" resolution they are preparing (and a companion measure now pending in the House of Representatives) will give a strong signal to the officials at the Department of the Treasury that any proposal to repeal the energy tax incentives would be opposed by Congress. We hope you will support the Chaffee-Matsunaga resolution.

Problems with the IRS Regulations of January 23

On January 23, 1981, the Internal Revenue Service promulgated final regulations to implement the provisions of the Energy Tax Act of 1978 providing investment tax credits for business energy property. These regulations contain certain inequities which we hope you will address when the Subcommittee takes up S. 750.

The principal problem for GeoProducts appears at 26 CFR 1.48-9(c)(10)(iv) which states that:

> "(iv) Equipment that uses energy derived from a geothermal deposit is eligible [for the 15% investment tax credit for geothermal property] only if it uses geothermal energy exclusively. Thus, geothermal equipment does not include equipment that uses energy derived both from a geothermal deposit and from sources other than a geothermal deposit..."

The obvious purpose of this limitation is to prevent systems which are primarily fueled by oil or gas, with only a minimal geothermal contribution, from qualifying for the geothermal credit. However, the IRS rule inadvertently, but nonetheless adversely, penalizes innovative hybrid projects like the one GeoProducts is contemplating in northern California.

Under the IRS regulations, those components of the hybrid plant which "produce, extract, or use" energy derived "exclusively" from a geothermal deposit (such as hot water distribution lines) are eligible for the credit for geothermal property. Similarly, those components of the plant which convert the wood waste to steam (such as the fire box and the boiler) will qualify for the credit for "alternative energy property", because the wood burned to heat the water is "an alternate substance". But, those parts of the plant which use energy from both geothermal and biomass sources (such as the turbine generator set) cannot qualify for either credit.

The limitation is especially unreasonable in light of explicit language in the Energy Tax Act which states the "geothermal equipment" includes, in the case of electricity generated by geothermal power, all of the components of the plant up to (but not including) the electrical transmission stage. The intent of Congress that all of the equipment of a geothermal power plant qualify for the credit is quite clear. Unfortunately, the IRS regulations are not so explicit.

Other examples serve to illustrate the unfortunate restrictions which this IRS rule has placed on mixing geothermal energy and energy from another energy source. Geothermal resources may not, in some instances, be hot enough to fully satisfy a particular industrial process heat requirement. However, by adding a few degrees to the heat supplied by the geothermal source, it is often possible to reduce significantly the amount of oil or gas used in a plant or facility. Furthermore, many industrial processes involve several separate steps requiring different temperatures. Some of these steps can use geothermal heat, while others may require further heating. Under the IRS regulations, if an industrial or commercial geothermal system contains even a minimal addition on non-geothermal heat, then the energy system is ineligible for the energy investment tax credit.

A Proposed Amendment to S. 750

In order to correct these inequities, GeoProducts has prepared an amendment to S. 750 which is attached to this statement. The amendment has two basic provisions.

In the case of a business energy system which uses both geothermal energy and energy from a source not eligible for the investment tax credits (such as oil or gas), a new eligibility formula is proposed: all of the equipment of the system shall be eligible for the credit for geothermal property if more than 80 percent of the energy is supplied from geothermal resources. If less than 80 percent comes from geothermal, the credit shall apply to only those portions of the system which produce, distribute, extract, transfer, or use energy which is more than 50 percent supplied by geothermal.

For a system which uses geothermal energy and another energy source which is eligible for the energy investment credit (such as biomass, wind, or solar), all of the equipment of the system shall be eligible for the tax credit for geothermal property if more than 80 percent of the energy comes from geothermal, or any of the other alternative energy sources eligible for the credit, or any combination thereof (referred to as "qualified sources"). If less than 80 percent of the energy is supplied by qualified sources, the credit shall apply to those portions of the system which produce, distribute, transfer, extract, or use energy which is more than 50 percent supplied by such qualified sources.

The purpose of the second section of the amendment is to deal with situations, like the GeoProducts hybrid plant, where a combination of alternative energy sources will be used to produce electrical power. Existing law already allows electric generating equipment driven by hydroelectric, wind, or geothermal energy to qualify for the energy tax credit. The logic behind enacting the credits for such situations was to encourage the construction of facilities to produce electric power from domestic alternative energy sources. Since geothermal and biomass are clearly "alternative energy sources", it is consistent with the original intent of Congress in adopting the Energy Tax Act to extend the business energy investment credits to steam-driven, turbine-generator sets utilizing water from any source, if the water is converted to steam by use of alternative energy sources, such as geothermal heat, biomass energy, or any combination thereof.

We appreciate your consideration of this amendment. We stand ready to answer any questions you might have or to assist the Subcommittee in any manner.

Thank you for this opportunity to present our views.

Proposed Amendment to S. 750

At a relevant place, insert the following new section:

"Paragraph (3) of section 48(1) is amended by adding at the end thereof the following new subparagraph:

"(H) APPLICATION OF CREDIT UNDER SECTION 46 TO EQUIPMENT WHICH USES ENERGY FROM A GEOTHERMAL DEPOSIT AND ANOTHER ENERGY SOURCE. --

(i) In the case of a system which uses both energy from a geothermal deposit (hereinafter referred to in this subparagraph as "geothermal energy") and an energy source not eligible for the credit under Section 46, all of the equipment comprising the system shall be eligible for the credit for Solar, Wind, or Geothermal Property under section 46(a)(2)(C) if, on a British Thermal Unit (BTU) basis, geothermal energy provides more than 80 percent of the energy in a typical year for which the system is designed. If less than 80 percent of the energy is supplied by geothermal energy, the credit shall apply to those portions of the system which produce, distribute, transfer, extract, or use energy which is more than 50 percent supplied by geothermal energy (on an annual BTU basis).

(ii) In the case of a system which uses both geothermal energy and another energy source eligible for the credit under section 46 (such as biomass, solar, wind, ocean thermal, or hydroelectric), all of the equipment comprising the system (up to, but not including the electrical transmission stage in the case of an electrical generation facility) shall be eligible for the credit for Solar, Wind, or Geothermal Property under section 46(a)(2)(c) if, on a BTU basis, more than 80 percent of the energy in a typical year for which the system is designed, is suplied by geothermal energy, or any of the other forms of energy eligible for the credit under section 46, or any combination thereof (hereinafter referred to in this subparagraph as "qualified sources"). If less than 80 percent of the energy is supplied by qualified sources, the credit shall apply to those portions of the system which produce, distribute, transfer, extract, or use energy which is more than 50 percent supplied by such qualified sources (on an annual BTU basis).""

International
Cogeneration
Society
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The Honorable Malcolm Wallop
Chairman
Subcommittee on Energy and
Agricultural Taxation
United States Senate Finance Committee
Washington, D.C. 20510

Dear Mr. Chairman:

This letter is submitted by the International Cogeneration Society for inclusion in the record of the hearings on S.750, the Industrial Energy Security Tax Incentives Act of 1981. A copy of this letter is being sent to each member of the Finance Committee.

The International Cogenerational Society (ICS) is a non-profit organization composed of representatives of private industry, public utilities, and state and federal governments. ICS was formed to act as a source of education and information about cogeneration, and to represent the interests of cogenerators and potential cogenerators.

SUMMARY

Cogeneration is one of the most promising techniques for energy conservation that is currently available to industries in the United States. It is important that, as this committee again begins to consider legislation to provide tax incentives for energy conservation, careful consideration be given to the need for tax incentives for cogeneration. ICS endorses S.750 because it would substantially improve the existing energy tax credit for cogeneration equipment. However, to encourage the practice of cogeneration in as many facilities as possible, and to avoid creating artificial barriers to certain types of cogeneration projects, ICS recommends that S.750 be modified to extend the energy tax credit for cogeneration equipment to new facilities and to facilities owned by public utilities.

TECHNICAL ASPECTS OF COGENERATION

Cogeneration is the sequential generation of electrical (or mechanical shaft) power and useful energy -- generally in the form of space heat or industrial process heat -- from the same energy source. In the United States today, electric energy and heat for space heating or industrial process uses are generally produced separately. Cogeneration, by combining these two functions into a single integrated energy using system, can lead to the realization of substantial energy savings. Cogeneration systems can achieve overall efficiencies of energy use as high as 80 percent, which compares very favorably with the 36 percent efficiency which is typical for central station power plants. Cogeneration can result in total energy savings of up to 35 percent over separate, single purpose systems producing the same quantities of electricity and useful heat.*/ Government studies have estimated that the widespread practice of cogeneration could result in energy savings of as much as 2.4 million barrels of oil a day.**/ Indeed, the potential savings from cogeneration are so substantial that Robert Stobaugh and Daniel Yergin, in their widely read book, Energy Future:Report of the Energy Project at the Harvard Business School, characterized cogeneration as "Industry's North Slope."

Cogeneration can be practiced in connection with a variety of energy-using systems and a variety of energy sources. In the simplest case, high temperature, high pressure steam is produced in a boiler. The steam is used to generate electricity in a back pressure or extraction turbine, after which the low pressure and low temperature exhaust steam is used for industrial process or space heating purposes. In the alternative, electricity may be generated using a diesel engine or a combustion turbine, after which the exhaust is channeled to a waste heat recovery boiler to produce steam for other purposes. In simpler systems, the steam from the waste heat boiler is used directly for space heating or industrial process purposes. However, in combined cycle cogeneration systems, the steam from the waste heat recovery boiler is first used for further electric generation, and is passed through an extraction or back pressure turbine before it is made available for space heating or process use. In each case, energy is used more efficiently in the cogeneration system than it would be in a single purpose energy system.

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*/ Comptroller General's Report to the Congress - Industrial Cogeneration -- What it is, How it Works, Its Potential, U.S. General Accounting Office, April 1980, pp. 90-91.

**/ A number of recent studies are summarized in Cogeneration: Technical Concepts, Trends, Prospects, U.S. Department of Energy, September 1978, p. 83.

THE NEED FOR A FEDERAL ENERGY POLICY

After the 1973 oil embargo, the Federal Government became involved in almost all aspects of energy production and consumption. This involvement ranged from price regulation of oil and natural gas to tax and regulatory incentives for energy conservation and alternative energy production. However, under the current Administration, the role of the Federal Government has changed substantially. The present Administration believes that energy choices and energy conservation decisions should be dictated by market forces, and that the Federal Government should not interfere with these forces. To implement this philosophy, the Administration has accelerated the decontrol of oil prices, and is considering proposals to decontrol natural gas as well. It has also eliminated or substantially curtailed many programs, such as the Alcohol Fuel Loan Guarantee Program, which were designed to stimulate energy conservation and the production of alternative sources of energy. The President's latest package of budget recommendations would further reduce the federal involvement in the alternative energy and energy conservation areas.

Unfortunately, there is a basic error in the underlying assumption that the elimination of federal energy conservation and alternative energy programs will result in a free market in which all forms of energy will be priced to reflect their true costs and in which market forces will be the sole factor affecting energy decisions. Even if these programs are completely eliminated, conventional and alternative energy will not be competing in a free market because the Federal Government will still be providing substantial tax incentives and other subsidies for the use of conventional sources of energy, and particularly for the use of imported oil.

One of the most important government subsidies for imported oil is the massive military budget necessary to protect our interests in the oil-producing portions of the world, and particularly in the Persian Gulf. In fact, one of the principal reasons for the growing concern over our military strength and for the resulting pressure to increase defense spending on programs such as the Rapid Deployment Force is insecurity about the continuing availability of oil from the Persian Gulf. The incremental portion of our defense budget which is related to the defense of foreign petroleum sources is, as a practical matter, an indirect subsidy for oil consumption. Members of the alternative energy community have estimated that this "DOD surcharge" is as much as $20 for each barrel of imported petroleum. Because this surcharge is paid out of general tax revenues, it is not reflected in the cost of oil and petroleum products to the consumer. Thus, it amounts to an indirect government subsidy for imported oil.

The elimination of government incentives for alternative energy production and energy conservation, while subsidies for the consumption of imported petroleum in the form of increased military spending are allowed to continue and even to increase is a dangerous course. It in effect encourages the consumption of energy which is not renewable and whose source is insecure, while doing little if anything to encourage energy conservation or the use of energy whose source is renewable or which is produced from secure domestic sources. A rational approach to our near-term and long-term national energy needs demands that this pattern of government involvement in energy production and consumption be reversed.

The energy tax credit is an effective way to reduce the cost of alternative energy production and energy conservation relative to the cost of oil and natural gas, so that all energy sources are priced in proportion to their true costs. Most members of the energy community agree that the energy tax credit is an effective incentive for energy conservation and the development of alternative energy sources. This is confirmed by a recent survey of ICS members, which revealed that the overwhelming majority of survey respondents felt that the energy tax credit was a useful and important incentive. Accordingly, ICS endorses the efforts of the members of this committee to preserve the existing energy tax credits and to expand the energy tax credit for cogeneration and other forms of energy conservation and alternative energy production equipment.

IMPACT OF S.750 ON COGENERATION

Currently, a 10 percent energy tax credit is available through the end of 1982 for cogeneration equipment which produces electricity in combination with other forms of useful energy. The credit is only available for expenditures which relate to the increased production of the secondary energy product of the cogeneration system. The credit is not available for systems which use oil or gas as a fuel (although oil or gas may be used if it does not exceed 20 percent of the total fuel and is used exclusively for start-up, back-up or flame stabilization). The credit is not available for public utility property or for cogeneration equipment installed at new facilities.

S.750 would increase the energy tax credit for cogeneration equipment to 20 percent and would extend the credit through the end of 1986. It would also substantially expand the category of qualifying equipment by making the credit available for any property which is part of a system which uses the same fuel for the sequential generation of electric power and/or mechanical shaft power in combination with steam, heat, or other forms of useful energy at an existing facility. The bill would thus eliminate many of the complex requirements, such as the secondary energy product requirement, which have substantially diminished the incentive effect of the existing cogeneration credit. By removing these limitations, S.750 would make the energy tax credit for cogeneration equipment much more effective.

ICS strongly supports the extension of the energy tax credit and the modification of the definition of cogeneration equipment contained in S.750. In a recent survey of ICS members, a substantial majority of those responding endorsed tax incentives of the sort that would be provided under S.750. ICS believes that the enactment of the incentives provided under S.750 would make a meaningful contribution to resolving our nation's energy crisis.

RECOMMENDED MODIFICATIONS

While ICS endorses S.750, its incentive effect could be substantially enhanced by certain modifications. These modifications including extending the energy tax credit to public utility property and extending the credit to new cogeneration systems. Like the modifications to the existing cogeneration credit already contained in S.750, these modifications were endorsed by a substantial majority of the respondents to the recent ICS survey.

Credit for Public Utility Property

Under current law, the energy tax credit for cogeneration equipment -- and for most other items of energy property -- is not available with respect to "public utility property." The original rationale for denying the energy tax credit to public utility property was that even without the credit, public utilities would be compelled to switch from the use of oil and gas to the use of alternative energy sources.*/ However, this rationale does not apply to cogeneration equipment, since the factors (such as the increased price of oil) which compel utilities to switch to alternative energy sources do not compel utilities to undertake the added expense of installing cogeneration equipment or otherwise arranging their projects to permit the practice of cogeneration. Accordingly, it would be appropriate to provide an incentive -- in the form of an energy tax credit -- to encourage utilities to develop cogeneration projects.

The exclusion of public utility property from the energy tax credit under current law has created artificial barriers to utility participation in cogeneration projects. This has substantially distorted the natural market forces which would otherwise govern the structuring of cogeneration projects. Consistent with the current administration's policy of allowing market forces to determine investment patterns to the greatest possible extent, ICS strongly recommends that utilities be allowed to share equally with non-utilities in the incentives provided by the energy tax credit.

This committee should bear in mind that the basic rules governing the investment and energy tax credits ensure that any tax incentive that is provided to utilities will actually serve as an incentive to the utility, and will not merely be passed on to the utility's customers. Under Section 46(f) of the Internal Revenue Code, public utility property is not eligible for the investment or the energy tax credit if the benefit of the credit is flowed through to reduce either the rate base or the cost of service used to establish the utility's rates. Thus, utilities are not eligible for either the investment or the energy tax credit unless they normalize the benefit of the credit. Because S.750 would not change this underlying rule of utility taxation, the incentive provided by the energy tax credit would not be lost.

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*/ See S.Rep.No.95-529, 95th Cong. 1st Sess. (1977), p. 71.

New Facilities

The energy tax credit for cogeneration equipment under S.750, as under current law, is limited to equipment installed in connection with an existing facility. However, the capital investment required to install cogeneration equipment in a new facility is also substantial, and also needs encouragement and support through the energy tax credit. Indeed, new facilities are generally better suited to cogeneration than are existing facilities. Cogeneration requires high pressure boilers, while most boilers in existing industrial or commercial facilities are low pressure boilers which are used to produce low pressure steam for space heating or for use in industrial processes. Similarly, existing utility generating facilities which produce waste heat which could be used for other purposes are often not located close enough to potential industrial or commercial customers. These problems associated with existing facilities can be difficult or impossible to correct. By contrast, new facilities can be built from the outset to avoid these problems. Nevertheless, the practice of cogeneration of a new facility can also substantially increase the direct and indirect cost of the facility. Accordingly, the energy tax credit should be available for cogeneration equipment which is installed at new as well as existing facilities.

Energy Sources

Cogeneration equipment can utilize virtually any energy source, including fossil fuels, biomass, geothermal energy or solar energy. However, the definition of cogeneration equipment in S.750 refers to systems which use the same "fuel" to produce electrical, mechanical, or useful thermal energy. It is not clear whether the term "fuel" can or will be interpreted to include energy sources -- such as geothermal and solar energy -- which are not traditionally thought of as fuels. Accordingly, the word "fuel" should be replaced with the words "energy source" in the definition of cogeneration equipment.

CONCLUSION

ICS appreciates the opportunity to submit these comments, and looks forward to working with the members of this committee in the future to help develop a comprehensive and meaningful cogeneration policy for the United States.

Respectfully submitted,

Lee M. Goodwin

Lee M. Goodwin, Chairman,
ICS Legislative and
Regulatory Affairs Committee

LMG/bjm

STATEMENT
OF
MR. MARTIN KLEPPER
ATTORNEY
LANE AND EDSON, P. C.
WASHINGTON, D. C.

SUBMITTED TO:

COMMITTEE ON FINANCE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
HEARING ON INDUSTRIAL AND COMMERCIAL
TAX CREDITS

October 19, 1981

INTRODUCTION

Mr. Chairman, and members of the Subcommittee, my name is MARTIN KLEPPER.

I am an attorney with the Washington, D.C. law firm of Lane and Edson, P.C., and have been working for the last four years on various ways of financing investments in energy conservation. We have worked with public and private sector clients, including major national underwriters, leasing companies, companies that raise equity capital, and state and local governments. Recently we completed a study for HUD that identified methods of financing energy efficiency measures in small and medium sized industrial buildings in New York City.

I've also had a unique opportunity, by serving as chairman of the Energy Law Committee of the American Bar Association's Section of Real Property, Probate and Trust Law, to talk with attorneys throughout the country who are interested in energy conservation financing. However, my testimony is presented in my personal capacity and not as a representative of any client or group.

We are currently in a state of energy transition from the artificially low prices of the past decades which in effect served as incentives for investments in inefficient plant and equipment, to the current decade of high energy prices. To bridge this gap, property owners need incentives sufficient to overcome the non-economic barriers to energy investment. These incentives are also necessary to interest financial institutions in entering the business of providing third party financing for energy measures. To date, banks, insurance companies, leasing companies and underwriters have not actively developed financing programs for energy efficiency measures. Enactment of the energy conservation tax credits provided by S. 750 and S. 1288 will form the basis for more active involvement of financial institutions in helping industry become more energy efficient.

These financial institutions can provide the private sector capital needed to finance energy investments. Firms with energy savings potential can obtain the funds needed to install efficiency measures from third parties if adequate tax credits are available. To date there has been relatively little third party financing of energy efficiency measures. Third party financing -- by a bank, a leasing company, a manufacturer, etc. -- is particularly important to small and medium sized firms which cannot finance conservation investments out of internally generated funds.

To understand the need for additional tax credits, one must recognize that property owners do not act in accordance with model economic theory. Even if an investment is cost-effective, a host of other factors inhibit industrial conservation. These include:

1. Failure to apply rate of return analysis to measure energy investments. Energy costs usually constitute a very small portion of the total costs of manufacturing or creating a product, generally two to three percent of the value of the finished product. Therefore, the opportunity to reduce energy costs by ten

percent or more is often not as important in contributing to increased profitability as other investments, such as those that lead to increased sales.

2. Competition for investment capital. Competition for a firm's scarce dollars is widely recognized as the most important limitation on energy efficiency investment. An entity with limited funds will compare the expected return from one investment with the expected return from another. Aside from investments required by law, such as environmental and OSHA requirements, energy efficiency improvements often compete favorably with other projected expenditures of funds. However, they do not create added plant capacity which can have a multiplier effect on profits.

3. Separate responsibility. Separation of responsibility within a company for energy costs is another reason industrial energy conservation has been lagging. Energy bills are often paid by a corporate controller who does not have responsibility for managing the facility. In large firms one person has responsibility for energy costs and improving energy efficiency. Small and medium sized firms usually do not give energy similar attention.

I believe that the energy tax credits proposed in S. 750 and S. 1288 would help overcome these constraints and would provide an effective catalyst for industrial investment in energy efficiency improvements. These credits should be made equally available to small and medium sized firms so that they have an incentive to install energy efficiency measures. The Economic Recovery Tax Act of 1981 ("ERTA") does not, by itself, provide sufficient incentive for industrial and commercial energy efficiency investments. For example, the accelerated cost recovery system contained in ERTA requires a property owner who retrofits a commercial office building with a new boiler to depreciate that boiler over 15 years because it is a structural component of a building.

Tax credit incentives are necessary so that risk takers will undertake innovative conservation investments that will become accepted models for their industry. Without this added financial incentive, given high rates of interest, the return on capital invested in new energy efficiency technologies, relative to the risks, does not provide adequate incentive for many industrial and commercial efficiency investments. Even though energy conservation measures are not new, they are relatively new to most financial institutions which have no experience with the measures. Moreover, industry itself faces novel construction, financing and operating risks when it installs a new energy efficiency measure. Technologies developed in laboratories and in pilot demonstration projects may simply not translate to meet industrial and commercial demands. Operating costs could exceed original estimates because of higher than projected costs of construction, finance, environmental and regulatory requirements, and inflation. These risks may reduce a project's feasibility or increase the cost of energy efficiency to a level not competitive with other sources of energy or alternatives for capital investment. The proposed tax credits of S. 750 and S. 1288 increase the potential rate of return to a level which is expected to induce companies to overcome the risks and barriers now preventing investments in energy efficiency improvements.

The bottom line is that, without the economic incentive provided by S. 750 and S. 1288 businessmen in the industrial and commercial sectors simply will not finance many efficienty measures and energy will continue to be wasted. We should all remember that energy wasted today can not be recovered tomorrow.

I want to suggest for your consideration two specific changes to S. 750 and S. 1288 that I believe would significantly increase investment in energy efficiency improvements:

1. Provide a Safe Harbor For Energy Equipment Leases. The Economic Recovery Tax Act of 1981 has created a safe harbor from traditional leasing concepts for equipment leased by a corporation. These safe harbor rules permit corporations to transfer tax benefits related to owning equipment to other corporations who help finance the cost of the equipment. A similar safe harbor provision should be incorporated into S. 750 and S. 1288 to permit individual lessors to obtain the tax benefits related to owning and leasing energy equipment even if the lease would not otherwise qualify as a lease for tax purposes. This provision will permit third parties to finance the installation of energy equipment; it will significantly increase the ability of small and medium sized property owners to benefit from the new energy tax credits.

In the leasing area there are a number of restrictions on the use of leasing equipment that prevent a company that wants to lease energy conservation equipment for a building from obtaining the tax credits that would otherwise be available. There is a provision, for example, that if the lessor is an individual or group of individuals, the lease term cannot be more than one- half of the useful life of the equipment. It is very difficult for a company that is planning to acquire a coal-fired boiler with a fifteen year life to lease that boiler on an economic basis if the lease cannot exceed 7½ years. Under present law, if the lease exceeds 7½ years, the owner loses the applicable tax credit. Thus, even if a tax credit is available, because of the restrictions on leasing by noncorporate lessors, those tax credits cannot be used by partnerships or individuals to provide the capital that the property owner might need. The tax credit is meaningless to the building owner if he doesn't have the capital to buy the equipment. Therefore, I urge this Committee to allow noncorporate lessors of energy efficiency equipment to retain the tax credits without complying with other definitions of a "lease" for tax purposes.

2. Extend the Tax Credit To Multifamily Buildings. Based on our experience with a variety of clients who own and manage buildings, there is an urgent need for a tax credit that would induce eenrgy conservation in multifamily buildings. Currently, investment in energy efficiency improvements by multifamily property owners lags far behind conservation investments by both industrial and commercial property owners. The regular investment tax credit and most available energy tax credits are not available

for energy retrofit measures installed in multifamily buildings. The absence of tax incentives for multifamily building owners is a barrier that could be overcome by an amendment to S. 1288.

Thank you for the opportunity to offer these comments on S. 750 and S. 1288. Mr. Chairman, I applaud your commitment to energy tax incentives. I would be pleased to assist you and the Committee in preparing appropriate legislative language to accomplish the changes suggested above.

LUZ

2040 Avenue of the Stars, 4th Floor, Los Angeles, California 90067 Phone: (213) 277-5956

Mr. Robert E. Lighthizer
Chief Counsel
Committee on Finance, Room 2227
Dirksen Senate Office Building
Washington, D.C. 20510

Dear Mr. Lighthizer:

The Treasury Department has indicated that they are considering a reduction in, or elimination of, the energy tax credits mandated by Congress in 1978 and 1979 and intended to run through 1985.

Deputy Assistant Secretary of the Treasury for Tax Policy, David G. Glickman, at the public hearings held by the Senate Finance Subcommittee on Energy and Agricultural Taxation on October 19, 1981, stated that energy tax credits represent narrow government subsidies which are uneconomical and duplicative of the ACRS depreciation rules recently enacted by Congress. According to the current administration's views, such tax subsidies are disruptive to the efficient allocation of national resources in the marketplace and are similar to previous misallocations which have devitalized the United States economy over a period of years.

We believe that it is inconsistent for the Administration to insist that narrow subsidies in the form of tax credits not be given to industries such as solar energy while not recognizing the substantial subsidies that were given to fossil fuels in the form of percentage depletion allowances and intangible drilling expenses. Its argument becomes even more untenable given that these indirect but continuing subsidies have greatly aided the development of the fossil fuel industries. To deny the fledgling solar industries any such subsidies and then also demand that they compete in the marketplace with subsidized fossil fuels is unreasonable. On the contrary, since subsidies to the fossil fuel industries have fostered and continue to encourage these well-established industries, the case for extending tax subsidies to the solar industries would seem to be strengthened.

The Administration's contention that the energy tax credits are duplicative of ACRS depreciation is misleading. Solar systems would utilize short depreciation lives in any case because of this technology's potential for rapid technological change. ACRS shortens the useful life to be used by these systems from seven to five years, but this in no way can replace the energy credit. In fact, the ACRS takes something away by limiting the accelerated depreciation schedule to 150 percent of straight line in place of the 200 percent previously available. Moreover, ACRS is equally available to all taxpayers. Thus, ACRS really changes none of the rules by which solar technology competes with fossil fuels in the marketplace. Since it gives no incentive for U.S. industry to make the changeover to the solar alternatives, it cannot possibly be considered duplicative of the energy tax credits which do provide these incentives.

We of the Luz Group of companies would like to demonstrate to the Senate Finance Subcommittee on Energy and Agricultural Taxation that, with respect to solar-powered industrial process heat (IPH) installations, the Administration's objections to energy tax credits are unfounded. In addition, we will show that the present tax credits are, in fact, essential for developing the market for solar IPH and that this market requires lead time and tax subsidies to develop, probably until 1986, the expiration date of these credits as originally enacted by Congress. We will show that a reduction or elimination of energy tax credits now available for investments in solar energy would frustrate Congress' countervailing energy policy of encouraging solar energy for industry, and that it would bring to a standstill the further development of mass-produced solar industrial energy equipment at Luz. These energy credits have enabled the Luz Group to find financing for large, capital-intensive solar systems without the necessity of expensive government bureaucracies and lengthy regulations. These long-range capital ventures cannot be assailed with ever-changing government tax policies without detriment to further capital formation. Reductions or elimination of energy tax credits proposed by the administration and sent up as trial balloons will make the gathering together of this risk capital difficult or even impossible.

We, therefore, urge the Congress to follow through on its 1978 priorities in order to continue the nation's commitment to attaining energy independence by both reducing its dependence on foreign oil and conserving its own natural resources. In support of our arguments, we are presenting several key factors of our own market.

Luz solar technology potentially can replace up to 13 percent of the total energy needs of the United States

As reported by the Solar Engineering Research Institute, the industrial sector of the economy is the nation's largest consumer of energy, at about 37 percent of gross demand, of which 50-80 percent is IPH (industrial process heat). This heat is used in food, textile, paper, chemical and petroleum products manufacturing, as well as secondary and tertiary oil recovery.

Solar technology is most cost-effective at intermediate temperatures which represents 27 percent of total IPH energy needs and it can also be used for substantial preheating when higher temperatures are required. Altogether, the potential market solar-generated IPH can replace is estimated to be the equivalent of between 1.4 to 2.0 billion barrels of oil annually. This means that, as marketed by Luz and other firms, solar-generated IPH alone could replace between 10.1 to 13.2 percent of the nation's total energy needs.

Energy tax credits are a bargain

Any delays in investing in more energy-efficient equipment or converting to the use of abundant domestic fuels means that the United States is wasting energy and needlessly importing oil. Alternative energy sources conserve our natural resources and reduce our need to import oil. The future value to the nation of conserving its natural resources has been estimated to far surpass the current cost of energy tax credits given to encourage the development of the alternative energy sources.[1] The revenue loss of retaining the energy tax credit for two years has been estimated by the Treasury Department at $3.2 billion, whereas the potential annual savings of 2 billion barrels of oil is worth $70 billion at current prices.

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[1] Professors Robert Stobaugh and Daniel Yergin, Harvard Business School, Harvard University.

Mass-production of solar IPH technology will dramatically lower solar produced energy prices

A 1981 study was made of 33 solar IPH installations manufactured since 1977 which showed that, even without the benefit of mass production technology, the average installed cost of IPH solar energy dropped over tenfold between 1977 and 1981.

Experience covering many years and spawning dozens of industries has shown that the cost and effort to produce new technological systems drops steadily and even dramatically as innovations in production and experience with the technology are accumulated. When this technology begins to be mass produced, there is invariably a quantum jump in these factors. As materials are bought in bulk and labor processes standardized, this decrease in cost drops to the point where the product's popularity adds substantially to these cost decreases.

The 1981 study of solar IPH systems used a common statistical model to project that, by 1986, cost per unit of solar IPH energy will drop to 40 percent of its current average price and, by 1990, to 25 percent.

Energy credits are substitutes for direct government involvement

At Luz, the development of solar technology and construction of plant and equipment has progressed to the point where the initial "kernel" or start-up units have been manufactured without any direct financing by the U.S. government. Instead, the availability of energy credits has enabled the solar industry to locate the financing for large capital-intensive solar systems to be installed by Luz at major textile factories owned and operated by J.P. Stevens, Cone Mills and The Bibb Company, thereby eliminating the necessity of expensive government bureaucracies. These examples of capital-free market formation to support large projects is in direct contrast to the direct government subsidization given by many other countries when large, new technological systems of national importance are undertaken.

Solar-generated energy will be cost effective by 1986

The steep decline of solar-priced energy, which has been predicted by the majority of statistical and econometric models, will soon match the future prices of energy produced with conventional fossil fuels. While the cost of solar powered systems will drop steadily during the intervening period, the price of fossil fuels is expected to rise rapidly in response to the twin factors of further deregulation and increasing scarcity. The point at which solar and fossil fuel prices crossover has been variously estimated by the different quantitative models to be sometime between 1985 and 1988. Energy credits mandated by Congress until this time will enable the solar industry to industrialize to the point where solar energy prices match the price of fossil fuels in short supply which are rising.

Lead times in new technologies requires stability in the tax laws

In order to develop a new technological system, several years will be required developing the system's technology, building and testing prototypes, and tooling up to produce even a single commercial system. Only when this system is finally installed and operating can the investor take advantage of the energy credits. These long lead times may involve the investor in waiting several years before realization of any tax benefit.

The Luz Group was first organized in October 1979, at least partly in response to the energy tax credits mandated by Congress in 1978. Since then, two major system prototypes have been developed, and three major systems contracts have been signed with The Bibb Company, J.P. Stevens and Cone Mills. Not one dollar of U.S. government money was spent to develop the technology, market it to industry, and manufacture the first start-up systems. In fact, to date, not one dollar of energy tax credit has been earned or taken. Therefore, if Congress now disallows these tax credits, it will be taking away something anticipated by Luz investors.

Energy credits are of critical importance in raising private capital for alternative fuels

The only major barrier to the industrialization of present solar energy technology is the capital-intensive nature of large area solar systems. The availability of investment capital as well as the high cost of that capital represent major road blocks to industry. Even if it can be demonstrated that solar-generated heat is fully competitive with fossil fuel on a life-cycle basis, there is little impetus for the industrial plant manager to invest several million dollars in a new system.

The traditional way that industry purchases energy is as a monthly expense based on current consumption. Any increase in the cost of energy can be directly flowed through as an increase in the price of the product in order to maintain the same profit margin. The purchase of a solar process heat system on the other hand would require the end-user to capitalize and amortize the cost of energy rather than expensing it and this is generally not an attractive alternative.

The plant manager is accustomed to purchasing energy on a current annual basis, with minimal front-end investment cost. In order to substitute alternative energy systems, a means is needed in order to provide the front-end capital. The consensus opinion is that a substantial penetration of solar systems into the industrial market can only be expected when solar-generated energy can be purchased in a way similar to the purchase of fossils fuels and electricity.[1]

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[1] Study entitled "The Role of Financing in the Marketability of Capital Intensive Solar Technologies for Industry", conducted by William C. Dickinson, Laurence Livermore National Laboratory, Livermore, California; funded by the Office of Solar Applications for Industry, U.S. Department of Energy, number SOL-80-270, dated November 21, 1980.

The energy tax credits of 1978 and 1980 have provided the extra incentives needed to induce private investors to underwrite the research, development and start-up production costs of the new alternative energy technologies. The tax credits are a relatively simple, straight-forward method by which the government contributes to the financing of these new systems, while at the same time assuming for itself only a minimal financial risk, the much greater part of which is borne by the private sector.

Investors believed at the time of their initial participation in the financing of these systems that the energy tax credits would extend to at least 1985 and at the present rates. Thus, they anticipated that their risk capital would realize rates of return which reflected the economic value of these credits. If Congress now changes its priorities, the result will be further disorientation in these capital markets. It can be assumed that capital formation for the purpose of developing alternative fuels might become prohibitively high if there is a lack of confidence in the government following through with its 1978 and 1980 energy programs.

* * * * *

We at Luz believe that our new industry, solar industrial process heat, can make a significant contribution toward reducing the country's dependence on foreign oil. However, our experience to date in the market place leads us to believe that the present energy tax credits are essential to launching this new industry. Our sales would simply not have taken place and our manufacturing business would not exist without the tax credits. In time, probably 1985-89, with (i) reduced R & D expenditures; (ii) mass production cost savings; and (iii) continued, stable tax credits through 1985, this new industry will be on a firm economic foundation and will be able to function successfully without tax credit support.

Yours very truly,

Patrick Francois
Executive Vice-President

STATEMENT OF JAMES H. WILLIAMS, PRESIDENT
NATIONAL LIMESTONE INSTITUTE, INC.
SUBMITTED TO THE SUBCOMMITTEE ON ENERGY & AGRICULTURAL TAXATION OF THE SENATE COMMITTEE ON FINANCE

November 6, 1981

SUMMARY

- The National Limestone Institute supports the concept of both S. 569, the Soil and Water Conservation Incentives Act of 1981, and S. 1561, amending the Internal Revenue Code of 1954, providing for an investment tax credit for certain soil and water conservation expenditures.
- To implement an effective tax incentive, the minimum for such credit should be at the very least 10%.
- Strongly believes that Landowners and Operators both should be eligible to claim a tax credit or deduction as called for in S. 569.
- The implementation of soil and water conservation measures are dependent upon the availability of expendable farmer capital; an investment tax credit approach will help to increase additional participation in soil and water conservation.

* * * *

Mr. Chairman and Members of the Committee, we appreciate your willingness to examine the outstanding needs of our threatened soil and water resources and are pleased to have this opportunity to support an investment tax credit approach to soil and water conservation as proposed by S. 569 and S. 1561.

The National Limestone Institute has been interested and involved in agricultural land conservation since 1945. We represent the interests of over 500 limestone producers throughout the country, many of whom produce agricultural limestone, an organic material which is used to neutralize acid soil and, among other functions, increases the efficiency of fertilizer.

NLI is supportive of the overall concept of both S. 569 and S. 1561. We firmly believe that a tax credit or deduction covering expenditures for soil and water conservation is a realistic and workable method to achieve increased participation in soil and water conservation on a national basis. Because of the pervasive existence of soil erosion problems in this country, we feel it necessary and are delighted to support the development of tax policy that would serve to supplement existing conservation efforts.

Although it is difficult to reconcile the difference between a 10% and a 20% tax credit, it is our opinion that, in order to provide for the establishment of an effective tax incentive, the bottom line for such a program should be, at minimum, 10%. In terms of potential revenue loss, the Joint Committee on Taxation has projected an estimated sum of $34 million for 1982. We submit that, when comparing this sum to an overall $3.7 billion in annual farmer-paid taxes, it is but a small loss to the Treasury for the maintenance of and a real investment in a productive agricultural base.

We are also strongly supportive of the intent of S. 569 to extend eligibility to claim a tax credit or deduction to operators, as well as landowners. Because it is generally understood that there is little incentive for tenants to install conservation measures on land which they do not own, this approach could conceivably bring into treatment many thousands of acres of land which may have previously been neglected.

Because the basic decisions which surround the eventual installation of soil and water conservation measures are tied in the strictest sense to the availability of expendable capital, an investment tax credit would help the farmer overcome the short-term financial difficulty that often prohibits participation in soil and water conservation activities.

It is our understanding that S. 569 would also cover expenses for agricultural limestone to be used in conjunction with fertilizer and seed in the establishment of vegetative cover crops. The benefit of allowing for the use of aglime in this area is twofold. Aglime will not only maintain and strengthen the cover crop by supplying necessary organic matter -- improving overall soil characteristics -- but will also improve soil pH, thereby increasing the performance of the accompanying fertilizer application.

It is our belief that an investment tax credit will serve to increase the ability of farmers to participate in the conservation of our soil and water resources. Through the maintenance of existing "cost-sharing" philosophy, coupled with, among other programs, the approval of an investment tax credit as proposed by S. 569, we will be in a position to provide the leadership and commitment that is necessary to encourage the voluntary participation in conservation for which we are collectively striving.

NLI has long been an advocate of a unified national approach to conservation and supports the opinion that conservation is the responsibility of all who benefit from the productive resources that we as a Nation possess. Americans have become too comfortable in the belief that our national resources are limitless and, likewise, that our ability to meet an excalating worldwide demand for food and fiber is assured. At a time when soil erosion claims over a billion tons of valuable topsoil a year and an estimated 3 million acres of cropland are lost annually to non-agricultural uses, we cannot afford the expense of permanently damaging the future of our productive agricultural base through inattention.

Mr. Chairman, basic soil and water conservation is the cornerstone of a sound national economy. It is our sincere hope that this Congress will support an investment tax credit for soil and water conservation expenditures and, therefore, provide the direction that is necessary to sustain our future agricultural productivity.

* * * * *

LONG LAKE ENERGY CORPORATION
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TO: ENERGY AND AGRICULTURAL TAX SUBCOMMITTEE
SENATE FINANCE COMMITTEE
UNITED STATES SENATE

FROM: Paul J. Elston
President

RE: Expansion of the Energy Tax Credit
(S. 750 and S. 1288)

ENERGY AND AGRICULTURAL TAXATION SUBCOMMITTEE

We would like to thank the Chairman and members of the Energy and Agricultural Taxation Subcommittee for the opportunity to submit the views of Long Lake Energy Corporation regarding the Energy Tax Credit. Long Lake Energy Corporation is a private, small-scale hydroelectric development firm located in New York. We develop projects primarily in New York State.

We would like to commend this committee for introducing two bills to expand the coverage of the Energy Tax Credit. Although these two bills, S. 750 and S. 1288 do not have a direct bearing on our work, we feel that this hearing is an appropriate forum to bring related issues to the Energy Tax Credit to the Committee's attention. We hope you will consider these issues in your future work on the Energy Tax Credit.

As members of this Committee know, there has been an interest on the part of the Administration recently, to eliminate the energy tax credit completely. Many members of Congress have already demonstrated their opposition to this move. We urge all of the members of this Committee to continue their efforts in support of the Energy Tax Credit.

From the perspective of a small-scale hydroelectric development company, the elimination of the Energy Tax Credit would add 11% on to the cost of each project. In many instances, this will make hydro projects uneconomical to develop. In light of the Administration's policy to encourage the maximum domestic energy production, any steps that will discourage the development of renewable energy resources seems contradictory. There is no question that small-scale hydro and other renewable resources are capable of contributing a significant amount to our nations energy supply. We recommend that this Committee continue and expand its support of the Energy Tax Credit.

We have one particular suggestion to make which we hope the Committee will adopt when it considers the energy tax credits. Under current law, the deadline for docketing a project in order to qualify for the energy tax credit is January 1, 1986. A project must be completed within three years of filing to claim the tax credit. We recommend that this Committee eliminate the completion deadlines.

Our reasons for wanting the deadline eliminated are that many projects run into very complex environmental and/or institutional issues which could cause companies to fail to meet the three year deadline for project completion. The period needed for FERC to make a decision on a license application could easily take a year or more. In light of the enormous increase in permit applications for hydro projects, FERC may be faced with a severe work overload in a couple of years when all of these permitted projects file for a license. The time necessary for regulatory review combined with construction time may well push many projects, particularly the complex ones, past the three year time limit.

When FERC issues a license it sets a deadline for the completion of a project. If a project does not meet the deadline, the license is revoked. We propose that this FERC deadline, established on a case-by-case basis, to reflect the complexity of the development be used as the Energy Tax Credit qualifying deadline.

The deadline for filing an application for a project may also need to be extended. Many states, such as New York State and Pennsylvania, have not completed their PURPA 210 regulations. Until these regulations are completed, many small scale hydro projects will not be developed. This delay on a state level could cause problems for a company wishing to meet the federal docketing deadline of 1985.

Should you have any questions about these issues, please feel free to contact us.

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MARY LYNNE WHALEN
J. D. WILLIAMS

November 2, 1981

Robert E. Lighthizer, Esq.
Chief Counsel
Senate Finance Committee
2227 Dirksen Senate Office Building
Washington, DC 20510

RE: Mustang Production Company's Comments to S. 750

Dear Mr. Lighthizer:

On October 19, 1981, Mr. David L. Thomas, Vice-President, Mustang Production Company, testified at the hearing held by the Senate Finance Committee's Subcommittee on Energy and Agricultural Taxation relating to S. 750, the Industrial Energy Security Tax Incentives Act of 1981. As indicated by Mr. Thomas' testimony at the hearing, Mustang strongly supports the provisions of S. 750 and submits the following written comments to the Subcommittee in order to more fully explicate its views regarding this important legislation.

Mustang Production Company is a wholly-owned subsidiary of Mustang Fuel Corporation. Mustang is a privately held company headquartered in Oklahoma City, Oklahoma with over thirty years of success in the energy industry. Mustang is involved in a wide variety of energy related activities including oil and gas exploration and production, natural gas processing and transmission, pipeline research and construction and crude oil transportation. In addition to its involvement in these more traditional energy resources, Mustang is also playing a major role in the development of energy from waste. It is Mustang's strong commitment to developing useful forms of energy from America's vast resources of waste materials that generates our interest in S. 750.

As an energy company, Mustang recognized the need to conserve our nation's resources and the need to develop alternative energy supplies. To Mustang's management, one readily available alternative form of energy seemed conspicuously undeveloped: garbage. Processing solid waste into a refuse derived fuel ("RDF") as well as recovering reusable materials such as metal and glass -- energy and resource recovery -- was identified as an idea whose time had come. As a natural outgrowth of Mustang's energy experience, Mustang RDF Company was formed in 1977 to provide management services in the development of energy and resource recovery projects and to operate the facilities once constructed.

Mustang RDF's initial experience in energy and resource recovery is in Tulsa, Oklahoma where a one thousand ton-per-day RDF project is being considered.

Under a contract with the City of Springfield, Missouri, Mustang RDF began studies in January 1980 to develop an energy and resource recovery system in that city. If proven feasible, a completed system could begin operation in Springfield by 1985.

Elsewhere in the southwest, Mustang is involved at various stages of development with several other cities to see if energy and resource recovery systems make sense for their communities too.

Mustang RDF's typical energy and resource recovery system may be comprised of any one or more of the following types of recycling equipment and alternate energy property:

Transfer Station - Transfer stations generally do not have equipment for processing, but rather are used as conveniently located disposal points within a community for the refuse collection vehicles. At the transfer stations, the refuse is then compacted into fully enclosed trailers for transportation to the processing plant. The primary function of a transfer station is to provide transportation cost savings to the community or refuse collectors in the form of fewer miles to travel, resulting in less fuel consumption. Unless transfer stations can demonstrate transportation savings, they are usually not included in an energy and resource recovery system.

Processing Plant - At the processing plant, the solid waste is stored and then processed into a refuse derived fuel (RDF). The following examples depict some of the ways this RDF can be used:

1. Sell the RDF to an electric utility to be burned in conjunction with coal in an existing boiler.
2. Sell the RDF to an electric utility to be used in an existing boiler requiring modifications to burn RDF as the primary fuel.
3. Use the RDF in a new boiler to produce steam or hot water for sale to industrial or commercial customers.
4. Use the RDF in a new boiler for firing new turbine generators to make electricity available for sale to electric utilities, industrial or commercial customers, in addition to the possibility of co-generation

-- producing steam or hot water for sale to industrial or commercial customers.

Depending upon the availability of markets and the economy of scale, recovery of reusable resources such as ferrous metals, non-ferrous metals and glass may also be incorporated in the processing of solid waste at the processing plant.

Unloading, Storage and Metering Facilities - In practically all situations, the RDF requires storage prior to being burned in a boiler. The location of the unloading, storage and metering facilities can vary from being on the processing plant site, within a few city blocks, or in some cases several miles away, all depending upon the market location for the RDF and its use.

In addition to the various applications of the RDF technology described above, one of the Mustang companies, Energy Technology Company, is a partner in Waste Technologies Industries ("WTI"). The other partners in WTI are Koppers Environmental Corporation, Waste Technologies, Inc., and Von Roll America, Inc. WTI is planning to construct a major industrial waste treatment and disposal facility at East Liverpool, Ohio The facility will be specifically designed to dispose of liquid industrial wastes, including those currently considered hazardous wastes by EPA. The liquid waste will be burned in a rotary boiler to generate steam which will be available to operate the plant and for sale to local industry. As designed, the plant will dispose of the liquid industrial wastes which currently pose a very substantial health and environmental pollution problem, while simultaneously generating useful energy.

Despite the enormous public benefit that stands to be gained as a result of energy from waste projects such as those outlined above, Mustang believes such projects are best initiated and carried out by the private sector. First, the alternative energy industry requires a long term commitment of substantial amounts of capital. Due to the nature of the public decision making process, the political consensus required to make such a financial commitment is often impossible to achieve. In any event, long delays must be expected which due to inflation can boost the original cost of a project to the point where it becomes no longer economically feasible. Moreover, even after the lengthy development process has run its course the project still may not proceed because of purely political factors which have no bearing on the merits of the project itself. Lastly, at this time there continues to be a significant financial risk that any alternative energy project will not be successful. Given their inherent conservatism, such a financial obligation is generally unacceptable for local and state governments already strapped to tight budgets and limited borrowing capabilities. In contrast, the private sector can move to design and construct alternative energy projects on a much more expeditious and cost effective schedule through the use of private capital.

Mustang believes that it is the appropriate function of the private sector to lead the way in the alternative energy frontier. In the past, Congress has made available some energy related tax credits to the private investor willing to assume the financial burdens associated with the development of alternative energy projects. However, the time has come for the country to become more aggressive in its drive for domestic energy independence. To accomplish this goal, additional legislation must be adopted that will encourage private equity investment and which, in turn, will reduce public debt financing.

Mustang believes that S. 750 is a major and comprehensive step in the right direction. By increasing the energy investment tax credit to 20 percent, the bill creates a substantial economic incentive for private investors to assume the large and necessary financial burdens associated with alternative energy projects. In addition, Mustang would take this opportunity to provide the following other comments relating to the provisions of Section 4 of S. 750 which deal with energy investment tax credits for "recycling equipment," "alternative energy property," and "public utility property."

I. Section 4(c): Recycling Equipment

Under present law, a 10 percent credit can be claimed in connection with equipment that is used to sort and prepare, or recycle, solid waste to recover usable materials or to convert solid waste into a useful form of energy. The Internal Revenue Code ("I.R.C.") does not define solid waste but the regulations adopt the definition from § 203(4) of the Solid Waste Disposal Act:

> The term "solid waste" means garbage, refuse, and other discarded solid materials, including solid waste materials resulting from industrial, commercial, and agricultural operations, and from community activities, but does not include solids or dissolved materials in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial waste water effluents, dissolved materials in irrigation return flows or other common water pollutants. Treas. Reg. § 1.103-8(f)(2)(ii)(6).

The existing definition does not clarify if the credit is available for equipment which recycles otherwise unusable materials that are found in a semi-solid or liquid form into usable raw materials or forms of energy.

In addition the present credit for "recycling equipment" is available only for equipment used in the process of converting solid waste into its first marketable product. (I.R.C. § 48(l)(6)(B)(i)). The credit is not available, under present law (Treas. Regs. 1.48-9(g)(2)(iii)(B)), for property which could further refine the product into a more valuable raw material or convert solid waste into a more efficient energy source beyond the first marketable product.

Mustang is in favor of S. 750's expanded definition of solid waste which includes discarded solid, semi-solid and liquid materials, including materials resulting from industrial, commercial, agricultural and community activities. This provision encourages the recycling of valuable raw materials and energy sources that are not found in the solid form.

Furthermore, the existing language of I.R.C. § 48(l)(6)(D) indicates that equipment used in the "conversion" of solid waste into a fuel or useful energy qualifies as recycling property. However, the statute does not define "conversion". It is important to emphasize that the technology whereby solid waste becomes a fuel involves no radical changes in the chemical or physical characteristics of the source material. The technology essentially requires that the solid waste be sorted, cleaned and shredded. Mustang therefore believes that the RDF technology is more accurately viewed as "processing" the raw material into a more useful form as opposed to "converting" it into an essentially different substance. Mustang is therefore in favor of the language contained in S. 750 which extends the credit to equipment used for converting or processing solid waste into fuel. In addition, the bill provides that recycling equipment includes property for unloading, transfer, storage, sorting and preparation of solid waste. We feel that these provisions will encourage investment and reduce the ambiguity in the law as it now exists.

II. Section 4(a): Alternative Energy Property

The existing language of I.R.C. § 48(l)(3)(A)(iii) states that "alternative energy property" includes "equipment for converting an alternate substance into a synthetic liquid, gaseous, or solid fuel."

As noted previously, systems can be designed which burn RDF in boilers which power turbines for the generation of electricity. The equipment used in this type of system would not qualify as alternative energy property under the existing statutory language. Consequently, Mustang supports the amendment contained in Section 4(a)(i) of S. 750 which extends the alternative energy tax credit to equipment used to convert an alternate substance "into electricity."

Furthermore, in its regulations relating to the existing provisions of I.R.C. § 48(l)(3)(A)(iii), the IRS has stated that:

> "preparing an alternative substance for use as a fuel or feedstock or for conversion into a fuel does not create a new product if no chemical change occurs. For example,

> pelletizing drying, compacting, and liquefying do not result in a new product if no chemical change occurs." Treas. Reg. § 1.48(c)(2).

Given the requirements of Treas. Reg. § 1.48(c)(2), the equipment used to process solid and liquid waste into usable fuels would not qualify as "alternative energy property" unless the process involved a chemical change in the original waste material. The technology whereby solid waste is turned into RDF does not involve such a chemical change; rather, the technology essentially requires that the solid waste be sorted, cleaned and shredded. Mustang therefore believes that the RDF technology is more accurately viewed as "processing" the raw material into a more useful form as opposed to "converting" it into an inherently different substance. As a result, Mustang would advocate the deletion of the chemical change requirement and the extension of the "alternative energy property" credit to equipment which is used either to "convert or process" alternative substances into a synthetic fuel.

The provisions of Section 4(a)(4) of S. 750 would eliminate the chemical change requirement in order for a substance to qualify as an "alternative substance" by stating:

> "The term 'alternative substance' includes ... any other product produced from an alternate substance, whether or not such product has undergone a chemical change in the process of its production."

Mustang believes this language quoted from Section 4(a)(4) does not address the real problem, as outlined above, associated with the chemical change requirement since even under the existing statute any substance other than oil, natural gas or any product of oil or natural gas already qualifies automatically as an "alternative substance." The problem to be rectified is whether a chemical change is required to "convert" an alternative substance into a "synthetic" liquid, gaseous, or solid fuel. By adding the phrase "converting or processing" to the existing language of I.R.C. § 48(l)(3)(iii), it would eliminate the necessity of effecting a chemical change in the original alternate substance in order for the equipment used in the process to qualify as "alternative energy property." Such a change, which is not reflected in S. 750, would appear to be consistent with the intent of Section 4(a)(4), and would insure that the equipment used to produce the variety of fuels capable of being produced by RDF plants and projects such as that being planned by WTI at East Liverpool, Ohio, qualify for the energy investment tax credits.

III. Section 4(f): Public Utility Property

The existing energy investment tax credits for "recycling property" and "alternative energy property" do not include property which is "public utility property" as defined by Section 46(f)(5) of the Internal Revenue Code. This definition provides that a facility is deemed to be a public utility if its rates for either the furnishing or sale of electricity or steam have been established or approved by a state or federal agency or public service commission. The present rules implementing the Public Utility Regulatory Policy Act of 1978, Pub. L. 95-617 (Nov. 9, 1978), provide that rates for the sale of electricity or steam by a "qualified cogeneration facility" are not subject to regulation by state regulatory authority. 18 C.F.R. Part 292, 45 Fed. Reg. 12214 (Feb. 25, 1980); 45 Fed. Reg. 17959 (March 20, 1989).

Section 4(f) of S. 750 would make it clear to private investors that equipment used at a "qualified small power production facility" or a "qualified cogeneration facility" will qualify for the energy investment tax credits and will not be deemed "public utility property." Consequently, Mustang supports this aspect of S. 750.

IV. Section 2: Termination Date for Credit

Section 2 of S. 750 extends the energy investment tax credit available to "recycling equipment" and "alternative energy property" from December 31, 1982 to December 31, 1986. Mustang believes that in the case of recycling plants and industrial waste processing plants such a deadline may not be realistic. Due to extensive feasibility studies and long-term construction the normal time span from conception to operation of a plant using recycling equipment is from 3 to 5 years. In addition, our experience has been that it takes anywhere from 6 months to one year to obtain a sufficient commitment to commence a feasibility study. Consequently, if a feasibility study is commenced in 1982, the first facilities utilizing these energy investment tax credits might not be functional until 1985 to 1987. The period of availability for the tax credits should be extended to December 31, 1990 to insure adequate participation in the program and to more realistically encourage construction of facilities using energy recovery systems.

Of course, Mustang would be happy to further amplify our views and answer any questions raised by our submission. If you or any members of the Committee would like any further information, please feel free to contact Mustang's undersigned counsel. Thank you again for the opportunity to participate in this important effort.

Respectfully submitted,

George D. Baker

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Attorney for Mustang Production Company

STATEMENT OF JAMES R. STITES, SENIOR VICE PRESIDENT
REPUBLIC GEOTHERMAL, INC.
PREPARED FOR
SENATE SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
SENATE COMMITTEE ON FINANCE
OCTOBER 30, 1981

My name is James R. Stites and I am senior Vice President of Republic Geothermal, Inc. a company engaged solely in the exploration, development, production and marketing of geothermal resources. I appreciate this opportunity to supply, for the Subcommittee's hearing record, a statement by Republic Geothermal with regard to S. 750, introduced by Senator Wallop.

First of all, I would like to thank Chairman Wallop and Senator Durenberger for their strong support in opposing the proposal surfaced by the Administration to repeal the energy investment tax credits. As Senator Wallop so aptly put it in his opening statement for this hearing, "it did not take long for the Administration to learn what the Congress already knew--that these credits have bipartisan, nationwide support". Without question, the tax credits are the major factor in the remarkable progress achieved in the renewable resources sector in general, and in the geothermal area in particular. Repeal of the geothermal tax credit will cripple or cause the demise of the geothermal industry. You can be sure that we will follow your lead in working to see that these important incentives remain in place.

Republic Geothermal generally endorses the concepts underlying S. 750, which will give a strong impetus to conservation. The renewable energy industry and the conservation industry work hand-in-hand to provide substitutes for costly imported oil. As such, we have consistently worked together to achieve the proper atmosphere--both in the investment community and in the regulatory arena--to enable us to make our maximum contributions to energy savings.

We note in particular that S. 750 would increase the energy tax credit for certain property to 20%, would extend the time period for eligibility for such credits through the end of 1986 and would extend the so-called "affirmative commitments" timetable to 1994 for these credits.

Mr. Chairman, we would respectfully request that the geothermal energy industry receive similar treatment since we face similar, and even more difficult problems in finalizing our projects. The commercial development of geothermal resources is capital intensive, characterized by high up-front capital costs, offset by low running costs over a long operating period. A typical geothermal project will take four to five years to complete after the geothermal resources which constitute a commercial prospect have been identified. Accordingly, you will easily understand why the geothermal industry needs the maximum tax credit to attract investors to a technology which is relatively new and thus perceived, by some investors, as risky, and which takes a considerable period of time to develop. For the same reasons, the present 1985 expiration date for the geothermal tax credit is too short; it should be extended at least the additional year envisioned in your bill and, more appropriately, for several more years. Finally, and again flowing from the above discussion, because of the long lead times required for geothermal plants, affirmative commitments language, similar to that contained in S. 750, is required. Your bill quite appropriately extends affirmative commitments through 1994 for certain non-renewable energy property. Few people recognize that there is no existing affirmative commitments section for certain other types of property, including geothermal property. Therefore, we would urge that you consider amending S. 750 to include affirmative commitments language for geothermal property and, in fact, all renewables, which should likewise enjoy the timetable spelled out in the bill.

We would also like to express our support for the portion of S. 750 which provides that "associated property" would be eligible for the corresponding energy tax credit of the parent property. This new and important concept will help alleviate the unduly stringent and restrictive interpretations taken by the Internal Revenue Service with regard to their interpretation of the energy tax credits. For example, we were stunned to learn that equipment used to drill for and produce geothermal energy was excluded from eligibility for the geothermal energy tax credit by IRS regulations issued in January, 1981, well after the enactment of the 1978 credits. Such equipment is fundamental to the production of geothermal energy and, we believe, was clearly intended to be eligible for the geothermal tax credit. This is merely one example of the type of obstruction posed by the Internal Revenue Service in its interpretation of the credits.

Finally, we would hope that the Subcommittee would monitor the practical application of the energy tax credits as companies strive to implement what you have legislated. This would emcompass technical questions and the more general concepts of making the energy tax credits truly effective. An example of the technical questions that arise is demonstrated by the recent application of the so called "at-risk" rules to investment tax credits, including the energy investment tax credits. An important exception was carved out for the renewable energy area, which requires substantial investment but also permits some flexibility for these newly developing areas. However, we have now run into a technical problem which deals with the application of these rules, i.e. how to allocate equity contributions. Chairman Wallop properly put this issue in perspective in his September 22, 1981 statement in the Congressional Record, which states that "in determining eligibility under at-risk exceptions, equity contributions to a project should be allocated pro rata among the purchase price of property and other uses of funds". A minor matter perhaps, but critical in determining how these incentives are to be implemented. As an example of the broader questions on effective application of the tax credits, we would urge you to look at how we can best market our technology overseas; this would help lessen other countries' dependence on oil and make our citizens the beneficiaries of lower prices based on mass production and marketing. In this regard, we invite your attention to the restriction against any property used predominantly outside the United States from qualifying for the investment tax credit. This, in effect, allows the contractor to export important technology and "know-how"; however, in the implementation phase he is discouraged from taking the tools of his trade abroad. This works against our twin goals of stimulating the economy and rectifying our now chronic negative balance of payments. Particularly in the emerging geothermal energy area, expanding the markets to include such property would dramatically reduce overall costs and further implement our national energy policy.

In closing let me again thank you and your Subcommittee for its leadership in the energy area. We believe that the energy tax credits have made the difference and that they have been instrumental in supporting our fledgling geothermal industry. We look forward to working with you and your Subcommittee in the future.

National Association of Manufacturers

Statement of The National
Association of Manufacturers
On S.750
The Industrial Energy Security
Tax Incentives Act of 1981
Before the
Senate Finance Committee
Subcommittee on Energy And Agricultural Taxation
November 2, 1981

1776 F Street, N.W. • Washington, D.C. 20006 • (202) 626-3700

Statement of The National
Association of Manufacturers
On S.750
The Industrial Energy Security
Tax Incentives Act of 1981
Before the
Senate Finance Committee
Subcommittee on Energy And Agricultural Taxation
November 2, 1981

The National Association of Manufacturers (NAM) appreciates the opportunity to submit a statement in support of S.750, the Industrial Energy Security Tax Incentives Act of 1981. The NAM represents approximately 12,000 companies which employ a majority of the country's industrial labor force and which produce over 85 per cent of the nation's manufactured goods. The Association is also affiliated with an additional 158,000 businesses through the National Industrial Council and NAM's Associations' Department.

Recent destabilizing events in the Middle East have once again reminded Americans of our nation's dependence on and vulnerability to disruptions in foreign supplies of petroleum/oil. Energy conservation, which we take to mean the more efficient use of energy, is one of the most powerful means available to our nation to reduce its excessive dependence on imported oil. Investments in energy conservation are usually low risk, often produce immediate results and are counter-inflationary because they improve productivity. Thus, improvement in energy conservation must be a fundamental part of any balanced national energy policy.

The NAM strongly believes that, in the long run, the most effective way to encourage energy conservation is through the free market system whereby market clearing prices on energy will stimulate its most efficient use. Although higher energy prices clearly will stimulate conservation in the long run, the NAM strongly supports and encourages adoption of short-term incentives which will stimulate and accelerate investment in industrial energy conservation.

The industrial sector consumes about 36 per cent of the nation's energy, most of which is oil and natural gas. Since 1973, the industrial sector has responded to higher energy prices and uncertain supplies by improving energy efficiency by more than 14 per cent.

Despite these improvements, there is still much that can, and should, be done. Many of our industrial plants are less energy efficient because they were constructed in an era of inexpensive energy. Retrofitting, or replacing these plants and processes, will require heavy capital investment. This investment will gradually occur as a result of higher energy prices. However, the basic problem facing individual companies in making investments to improve energy efficiency is cash flow. Typically, there are a greater number of opportunities for capital investment than there are company cash resources to support them. In these circumstances, energy conservation investments are likely to be deferred while businesses make needed investments to comply with regulatory requirements, improve existing product lines, or create new business opportunities. Short-term incentives, like the tax credits proposed in S.750, can provide industry with a tool for meeting this capital shortage and accelerating the rate at which these investments are made.

NAM heartily welcomed the recent passage of the Economic Tax Recovery Act of 1981 and the enactment in that legislation of an accelerated cost recovery system (ACRS). The provisions of ACRS allow for more rapid recovery of investments in plants and equipment thereby providing some of the funds needed for investments in new structures and equipment, including more energy efficient assets. Such measures are essential to modernize our nation's industrial production base, and the NAM firmly believes that the energy tax incentives under consideration here are consistent with and complimentary to this overall tax initiative.

Experience with investment tax credits since initial passage in 1962 has shown this mechanism to be effective in stimulating capital investment. The House Ways and Means Committee stated in House Report 95-1445 that "investments have increased when the credit has been made available and decreased when the credit was rescinded." One of our member companies reviewed their experience with investment tax credits. They confirm that capital expenditures increased in the years following the original enactment in 1962, and again picked up after restoration of the credit in 1971 and in the years following when the ITC was raised to the 10% level.

The NAM supports this tax credit proposed because its use has proved effective. They are less cumbersome to administer than other approaches (such as grants).

The NAM supports the Industrial Energy Security Tax Incentives Act of 1981 as introduced by Senator Malcolm Wallop. We believe industry will aggressively respond to the stimulation contemplated in the legislation, particularly if Congress clearly expresses this as a declaration of national energy policy.

This measure, if enacted, will effectively extend and clarify the definition of types of property to qualify for the proposed additional 20 percent investment tax credit. Moreover, Senator Wallop's new category of energy property called "qualified industrial energy efficiency property" would stimulate a broad class of industrial energy efficiency investment.

How effective would this bill be in accelerating major industrial energy conservation projects? Once again, one of our member companies assessed its impact with relation to some specific projects which are under consideration but which are now "on hold." One such project is a replacement boiler at a mill to produce processed steam using wood, production wastes and mill sludges as fuel. Under current conditions, the return is marginal, and they would defer the investment for at least five years. But, under the Wallop bill, the internal rate of return would nearly double, which would unquestionably accelerate this investment. Incidentally, this company also reports that they have undertaken a major energy savings investment in Canada, in response to credits allowed by the Ontario government to stimulate construction.

In summary, with increasing uncertainty surrounding the price and supply of foreign petroleum and the national imperative to accelerate an improvement in energy conservation and productivity, NAM supports Senator Wallop's investment tax credit approach. We concur that this approach would minimize the government's involvement in the business decision-making process, minimize the cost to government, and maximize potential energy savings.

Since the industrial sector uses more than one-third of the nation's energy, the potential for energy productivity savings is large: But, for a variety of reasons, industrial energy saving investments are often deferred in preference to other investments. Therefore, the NAM feels that it is appropriate public policy, as set forth in Senator Wallop's proposed legislation, to provide incentives for industry to pursue and accelerate energy efficiency investments which otherwise might not be made or would be substantially delayed.

Thank you.

National Retail Merchants Association
NRMA

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STATEMENT OF
NATIONAL RETAIL MERCHANTS ASSOCIATION
FOR THE RECORD IN HEARINGS
BEFORE THE
SUBCOMMITTEE ON ENERGY & AGRICULTURAL TAXATION
OF THE COMMITTEE ON FINANCE
UNITED STATES SENATE
ON
S. 1288
COMMERCIAL BUSINESS ENERGY TAX ACT OF 1981

November 2, 1981

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The following are the comments of the National Retail Merchants Association (NRMA) with respect to S. 1288, the "Commercial Business Energy Tax Credit Act of 1981."

NRMA is a national, nonprofit trade association composed of over 3,500 members operating more than 40,000 department, chain and specialty stores in the general merchandise retail industry. Our members have an aggregate annual sales volume in excess of $125 billion and employ over 2.5 million workers. In addition, the majority of our members are small businesses, with annual sales of less than $1 million each.

NRMA supports the creation of incentives to spur energy conservation in the commercial sector. However, before Congress creates new energy tax credits or expands those currently available, three questions must be explored: First, do currently available energy conservation incentives treat commercial business investments in conservation equipment in the same manner as the conservation investments of manufacturing firms? Second, do sufficient potential energy savings exist to warrant the expansion of currently available energy tax credits? Finally, if the potential for energy conservation does exist, can the country afford expanded energy tax credits in light of severe budgetary constraints?

The remainder of our comments explore these questions in greater depth.

I. Equitable Treatment for Commercial Sector Investments

In 1977 the commercial business sector of the United States consumed more than six quadrillion BTUs (quads)[1] to heat, cool and light the millions of commercial and retail buildings nationwide.[2]

The potential for energy conservation represented by this figure is vast; so large, in fact, that in 1978 Congress enacted the Energy Tax Act (PL 95-618) ("the Act") -- a law providing a nonrefundable 10 percent tax credit for business investments in "energy property."

The Act established a special list of eligible energy property -- "specially defined energy property such as energy management systems (computerized controls) -- designed to conserve energy or reduce waste heat in existing industrial and commercial facilities. The statute and its legislative history definitely seem to allow retailers and other commercial businesses the tax credit for installations of this "specially defined energy equipment." Nonetheless, on January 23, 1981, the Internal Revenue Service published regulations pursuant to the Act (IRC §48(l)(5)) that specifically make installations of specially defined energy equipment in retail facilities ineligible for the credit.

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[1] Energy Information Agency, Annual Report to Congress 1978, Vol. III U.S. Government Printing Office, Washington, D.C., page 299.

[2] Federal Energy Administration, Realizing Energy Savings: Energy Management Workshop for Retail Stores, National Retail Merchants Association, New York, N.Y., 1974, page 1-3.

This denial of energy tax credits to retailers is based on an erroneous interpretation of an apparent statutory requirement that all specially defined energy equipment be installed in connection with an existing "industrial or commercial process." The IRS regulations define "process" as "a means or method of producing a desired result by chemical, physical or mechanical action," thereby excluding all retail investments in this type of equipment. This definition is not only unduly narrow and contrary to the legislative history of the Act, but it takes the perverse view that energy saved in an industrial facility is more valuable to the nation than energy saved in a commercial facility. The net effect of these regulations is to base eligibility for existing energy tax credits on the type of business and not on the type of equipment installed.

The legislative history that bears upon IRC §48(l)(5) clearly demonstrates that Congress did not intend to exclude equipment installed in existing retail stores and commercial buildings from qualifying as specially defined energy property. The Committee Reports accompanying the House version of IRC §48 (l)(5) -- that is, the version ultimately adopted by the Conference Committee and enacted into law -- make clear that equipment installed in an "existing industrial or commercial facility," as well as in an "existing industrial or commercial process," each separately qualify for the credit. For example, the House Ways and Means Committee stated that the credit was intended to cover "investments by business in qualified property designed to reduce the amounts of oil, natural gas, or other energy consumed in heating or cooling a building or used in an industrial process (emphasis added)."[3]

This unequivocal language from the House Reports makes it clear that the term "process" was never intended to modify the term "facility." In fact, the Joint Committee staff, in summarizing the Energy Tax Act shortly after it was enacted, stated that energy property eligible for the credit included "certain specially defined equipment which reduces energy consumption in an existing commercial or industrial facility or process (emphasis added).[4]

Also clearly erroneous is the assertion by the IRS in the preamble to the January 23, 1981, regulations that the ultimate adoption of the term "process" by the Congress, in place of the term "operation" contained in the Senate-passed bill, evinced an intention to exclude "non-process" investments from qualifying for the credit. The Senate Finance Committee in marking up the Energy Tax Act did substitute the term "operation" for the House-adopted term "process." However, the Finance Committee clearly did not take this action in order to expand the list of qualifying energy-saving investments to include "non-process" items. In fact, under the rubric "operation," the only item added by the Finance Committee to the list of items previously included in the House bill was itself an item which clearly falls within the IRS definition of a "process" -- "industrial heat pumps."[5] It seems apparent, therefore, that the Senate Finance Committee chose to use the term "operation" simply because it was clearer than the term "process." More important, when the Conference Committee reverted to use of the term "process" in marking up the final bill, there is no indication that the term "process" was intended to have a different, much less a narrower, meaning than the term "operation." To the contrary, the only document employed by the Conference Committee in markup which clearly explicates this point indicates that these terms were regarded as interchangeable.[6]

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[3] House Ways and Means Committee Report on H.R. 6831, House Report No. 95-496, p. 20. Also see, Ad Hoc Committee on Energy Report on H.R. 8444, House Report No. 95-543, pp. 33-34, to the same effect.

[4] "Section-by-Section Summary of the Energy Tax Act of 1978," prepared by the Staff of the Joint Committee on Taxation (November 27, 1978), p. 96.

Congress never intended to exclude retail investments in specially defined energy property from the Energy Tax Act. For this reason, NRMA urges the Subcommittee to legislatively clarify IRC §48(l)(5) to indicate that retail investments in specially defined energy equipment placed in service after September 30, 1978, qualify for a 10 percent tax credit.

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[5] Heat pumps used solely to heat or cool building space were specifically noted as not qualifying as "industrial heat pumps." See Senate Finance Committee Report on H.R. 5263, Senate Report No. 95-529, pp. 77-78.

[6] See "Conference Comparison of the Energy Tax Provisions of H.R. 5363," prepared by the Staff of the Joint Committee on Taxation (November 7, 1977), p. 25. The table on this page, prepared for the purpose of summarizing differences between the House and Senate version of the bill, makes no distinction between "process" and "operation."

This retroactive effective date is necessary to conform the Federal Revenue Code to Congressional intent. In addition, many retailers were induced to make substantial investments in energy conservation equipment as a direct result of the Act's early interpretation. It would be unfair to allow the credit for investments by manufacturing firms in this type of equipment placed in service after September 30, 1978, while prohibiting the credit to identical commercial business investments undertaken at precisely the same time.

II. The Potential for Energy Savings in the Commercial Sector

Incentives to encourage energy conservation in existing commercial buildings are in the national interest.

Fourteen percent of the energy the U.S. consumed in 1978 was used to heat, air condition, light and provide hot water in commercial and retail structures.[7] This figure represents a vast reservoir of energy that conservation can tap to reduce American dependence on foreign oil.

What part does retailing play in tapping this valuable resource?

First, most retailers have adopted good housekeeping measures such as regular maintenance of air conditioning systems and reduction of unneeded lights. Similarly, many retailers have invested in low-cost, short-term measures such as re-lamping, replacing filters on heating, ventilation and air conditioning (HVAC) equipment and changing thermostats.

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[7] Federal Energy Administration, A Study of the Impact of Reduced Retail Store Operating Hours on Sales, Equipment, Economic Concentration and Energy Consumption, submitted by Energy Resources Co., Inc., Cambridge, Mass., 1974, page 2-3.

But operational changes and low-cost expenditures for maintenance programs are only two of the conservation options available to commercial buildings. Large capital investments such as new insulation, new HVAC systems, or computerized energy management systems can markedly improve the energy efficiency of commercial buildings. Unfortunately, these options are extremely expensive.

Profit minded businesses often consider large building "retrofit" investments "marginal" because competitive industries must justify such investments on a rate of return basis. As a result, retailers consistently use payback periods of three years or less for such investments. The problems of high interest rates, poor access to capital, an energy pricing system that artifically suppressed energy costs for many years, and the normal competition retrofit investments face from the other "more productive" investments (like increasing store square footage) all contribute to slow the pace of building retrofit in this country.

NRMA believes incentives such as the investment tax credit for building retrofit investments can make energy conservation a more attractive business investment. In fact, many knowledgeable individuals have recommended such a course of action.

For instance, the Joint Economic Committee in its August 1980 report entitled Energy and Materials recommended increasing the tax credit provided by the Energy Tax Act for building "retrofit."[8] Similarly, the conclusions of the Harvard Business School study entitled Energy Future call for a more "stimulative public policy, with tax credits up to 50 percent" for retrofit of industrial and commercial buildings.[9]

However, while tax incentives can accelerate the pace of building retrofit, rising energy costs also provide a powerful incentive for profit minded business to invest in energy conservation.

As such, the real question facing the Congress is whether it is necessary to speed the rate at which retrofit investments are currently made, and if such incentives are needed, can the country afford them at this time?

III. Budgetary Consideration

The Reagan Administration has asked Congress to eliminate "out-dated" energy tax credits. In the Administration's view, market forces alone are sufficient to induce timely investments in energy conservation. S. 1288, the "Commercial Business Energy Tax

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[8] Joint Economic Committee, Energy and Materials, a Shortage of Resources or Commitment? United States Congress, Washington, D.C., August, 1980, p. 173.

[9] Robert Stobaugh and Daniel Yergin, Ed., Energy Future, A Report of the Energy Project at the Harvard Business School, Random House, New York, N.Y., 1979, p. 173.

Credit Act of 1981," takes the opposite view and seeks to expand currently available credits to cover building retrofit items and to increase the credit from 10 to 20 percent.

NRMA supports the goal of S. 1288 -- the creation of new incentives for commercial building retrofit -- but we are deeply concerned that Congress will decide to pay for this incentive by either failing to balance the budget in 1984, or by modifying the personal and business tax cuts enacted earlier this year.

On the other hand, while NRMA agrees that the elimination of the currently available energy tax credit would erase an inequity in the treatment of investments by industrial versus commercial interests, we still oppose the Reagan Administration's plan to eliminate energy tax credits altogether.

Instead, NRMA urges the Committee to delay final consideration of expanded energy tax credits for building retrofit until the effects of oil and gas price decontrol are fully felt, and until we have a better understanding of the economic effects of the recently enacted business and individual tax cuts.

Eugene F. Rowan
Divisional Vice President
and Manager of Federal Government Relations

November 2, 1981

Honorable Malcolm Wallop
Chairman, U.S. Senate Subcommittee
on Energy and Agricultural Taxation
Rm. 2221, Dirksen Senate Office Bldg.
Washington, D. C. 20510

Dear Mr. Chairman:

The J. C. Penney Company, Inc. ("Penney") appreciates the opportunity to submit the following comments on certain aspects of S. 750, the "Industrial Energy Security Tax Incentives Act of 1981," (introduced by you) and S. 1288, the "Commercial Business Energy Tax Credit Act of 1981," (introduced by Senator Durenberger). We request that the comments be included in the hearing record on the bills.

S. 750 would, among other things, expand the energy tax credit definition of "specially defined energy property," increase the tax credits for installation of this property and extend them through 1986. The bill would also provide a new credit for certain energy efficiency and fuel conservation expenditures which reduce the amount of energy consumed by an industrial or commercial user.

S. 1288 would apply only to commercial users. It would modify the definition of "specially defined energy property," increase the tax credit and extend it through 1986.

Background

Penney is a major retailer with over 2,000 retail stores and other distribution facilities in all 50 states and in the Commonwealth of Puerto Rico. Annually, Penney consumes over 1.75 billion kilowatt hours of electricity and pays over $100 million in utility bills. (It is estimated that the entire retail industry utilizes over 3 percent of the nation's energy.)

Through conservation and other measures, Penney has been able to reduce its energy use by approximately 36 percent over the last six years. But further conservation efforts are required. Penney has made, and will in future years continue to make, substantial investments in energy conservation equipment, including the kind of equipment described in Section 48(1)(5) of the Internal Revenue Code.

J. C. Penney Company, Inc. 1156 Fifteenth Street, N.W., Washington, D.C. 20005

Congress enacted the Energy Tax Act (P.L. 95-618) in 1978. The Act granted a 10 percent energy tax credit for equipment installed to reduce the energy consumed in an existing industrial or commercial "process" (Code Section 48(l)(5)), and listed 11 types of energy conserving equipment which would qualify for the credit. The list included automatic energy control devices, computer equipment installed in a building to reduce wasted heating, cooling, lighting, ventilation, and the like ("specially defined energy property".)

On January 23, 1981, the Internal Revenue Service adopted regulations to implement the Energy Tax Act, including Reg. §1.48-9(f)(3), which took the position that to be eligible for the energy tax credit, the "specially defined energy property" must be installed in a commercial building and must be used to reduce energy in a manufacturing or commercial "process." The effect of the regulation was that energy property installed in a commercial building not involved in manufacturing, such as a retail store, would not be eligible for the energy tax credit because no "process" is involved.

Accordingly, Penney and other retailers are excluded from the benefit of the 10 percent energy tax credit for investments in equipment described in Code Section 48(l)(5) installed in connection with their store facilities. This equipment is a major component of our energy conservation measures and to the degree that Penney and other retailers are excluded, a limitation is placed on their financial ability to acquire and utilize new and more efficient equipment in the expansion of their energy conservation efforts.

Prior to these regulations, retailers and others assumed that the credit would be available for energy equipment installed in commercial buildings as long as they were used to conserve energy. This expectation was based in part on the often repeated legislative intent of the Energy Tax Act - to minimize energy usage and maximize energy savings.

Clarification of Existing Law

S. 750 and S. 1288 revise, extend and make more effective the existing investment tax credits designed to encourage energy conservation. Equally important, from our viewpoint, they clarify Congressional intent with regard to the definition of an industrial or commercial "process" in IRC Section 48(l)(5). Both bills amend that Code section to include the terms "activity" or "activities" within the meaning of "specially defined energy property." The effect of this amendment would be to nullify that part of the present regulations that deny the credit to all those business taxpayers not engaged in a commercial "process" under the IRS interpretation of such term. Moreover, these legislative proposals would make clear, once and for all, that the credit is available for all "specially defined energy property" used in an industrial or commercial activity. The amendment recognizes the fact that energy saved by a restaurant or retail store in the conduct of its business is no less a saving or worthwhile a goal than energy saved in a manufacturing process.

Conclusion

Penney supports those provisions in S. 750 and S. 1288 which would amend Code Section 48(l) to make clear that expenditures by commercial users for "specially defined energy property" used in their commercial facilities or activities will qualify for the energy tax credit. We believe Congress' intent to promote energy conservation in every sector of the economy will be furthered by enactment of this clarifying amendment.

Respectfully submitted,

Eugene G. Rowan

WASTE OIL HEATING MANUFACTURERS' ASSOCIATION
HEADQUARTERS IN c/o TIMOTHY VANERVER, JR.
PATTON, BOGGS & BLOW
2550 M STREET, N. W. WASHINGTON, D. C. 20037

STATEMENT OF THE WASTE OIL HEATING MANUFACTURERS' ASSOCIATION

ON

THE INDUSTRIAL ENERGY SECURITY TAX INCENTIVES ACT OF 1981, S.750

PRESENTED TO THE SUBCOMMITTEE
ON ENERGY AND AGRICULTURAL TAXATION
OF THE SENATE COMMITTEE ON FINANCE

NOVEMBER 2, 1981

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November 2, 1981

STATEMENT OF WASTE OIL HEATING MANUFACTURERS ASSOCIATION ON S.750

This statement is submitted by the Waste Oil Heating Manufacturers' Association for inclusion in the record of the hearings on S.750, the Industrial Energy Security Tax Incentives Act of 1981. A copy of this statement is being sent to each member of the Finance Committee. The Waste Oil Heating Manufacturer's Association (WOHMA) is a nonprofit trade association of manufacturers and distributors of waste oil heaters.

Summary

Waste oil heaters use waste oil--principally automotive lubricating oil--as an energy source for space heating purposes. The use of waste oil for such purposes displaces a variety of critical energy sources, particularly oil, gas and electricity. Huge volumes of waste oil are currently discarded each year. Waste oil heaters can recapture a significant portion of this valuable resource, without impairing such other methods of reusing waste oil as are also available. By providing an alternative to dumping waste oil, waste oil heaters also create important environmental benefits.

Waste oil heaters are extremely price sensitive. Based on previous marketing experience of members of the industry, it is expected that if waste oil heaters were eligible for a 10 percent energy tax credit, sales would be increased by 30 percent, while a 20 percent energy tax credit would increase sales by 50 percent. Because waste oil heaters can make a substantial contribution to resolving our energy crisis by displacing other, more critical sources of energy, and can also help to resolve the serious environmental problems associated with the disposal of waste oil, WOHMA urges this Committee to modify S.750 to extend an energy tax credit to purchasers of waste oil heaters.

Background

Waste oil heaters are specifically designed to use waste oil as a combustion fuel for space heating purposes.*/ Waste oil heaters manufactured and distributed by WOHMA members are vaporizing-type devices, which consume between 0.1 and 3.5 gallons of oil per hour and generate from 10,000 to 500,000 Btu/hr. (The maximum design capacity of heaters of this type is inherently limited to approximately 4.0 gal/hr.) As a result of these characteristics, such heaters are well-suited for use in relatively small commercial establishments, e.g., service stations and automobile repair shops.[*/].

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*/ Some devices also are capable of producing hot water for space heating or other applications.

In vaporizing-type burners, waste oil is exposed to high temperatures, which vaporizes its volatile constituents. These vapors are then combusted to produce thermal energy. A slag-like residue, principally composed of the impurities in waste oil (which do not vaporize) is left in the device. This residue is periodically removed and is readily disposable.[**/] All heaters offered by WOHMA members are designed with appropriate safety features, including cadmium sulfide sensors which automatically shut off the flow of fuel to the device if the flame goes out. With limited exceptions, all models of the heaters have been found to comply with appropriate UL safety specifications.

Energy Benefits of Waste Oil Heaters

Waste oil heaters offer a simple and direct alternative to other types of space heating. Ths use of waste oil for this purpose will necessarily result in decreased dependence on other critical energy sources, all of which should be reserved

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[*/] Based upon their vaporizing design, low fuel consumption rates, and primary function as space heaters, these devices are clearly distinguishable from other kinds of fuel-burning equipment, e.g., boilers and burners which are used to produce steam or process heat for industrial uses and which may be capable of using waste oil as a primary or supplementary energy source.

[**/] Some waste oil heaters (not including those manufactured and distributed by WOHMA members), as well as larger waste oil burning equipment, are atomizing-type devices, in which oil is forced at high pressure through nozzles which produce a fine liquid mist of oil, which is then directly combusted in liquid form.

for higher and better uses than space heating in commercial establishments. In many cases, waste oil heaters will substitute for a conventional oil burner and thus will reduce consumption of virgin fuel oil refined from domestic or imported petroleum. In others, waste oil heaters will supplant electric resistance heating, and so help to conserve electric power. In still others, the use of waste oil as a heating fuel will displace natural gas, also a critical energy source.

More important, waste oil heaters provide a means of recapturing energy which is now wasted. In the Used Oil Recycling Act of 1980 Congress declared that "used oil is a valuable source of increasingly scarce energy and materials."*/ According to Department of Energy estimates, however, at least 30 percent of the 700 million gallons of recoverable waste oil produced each year by automobiles alone is simply dumped into the environment indiscriminately and abandoned.**/ Thus, a very substantial portion of the nation's huge annual output of waste oil--and the energy it contains--remains unused for any purpose. Waste oil heaters can help to tap this valuable energy source.[*/]

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*/ 94 Stat. 2055, at § 2(1).

**/ Statement of Jerome F. Collins, Office of Industrial Programs, Conservation and Solar Energy, U.S. Department of Energy, Before the Subcommittees on Energy and Power and Transportation and Commerce of the House Committee on Interstate and Foreign Commerce, September 8, 1980. The total quantity of waste oil from other sources--*e.g.*, industrial cutting oils--is generally estimated to be at least equal to that from automobiles. However, unlike used automotive oils, these are not suitable for use in waste oil heaters.

Environmental Benefits of Waste Oil Heaters

Used oil can present serious environmental hazards if improperly disposed of. EPA has identified a number of hazardous constituents in waste oil, including significant concentrations of lead. When waste oil is dumped or allowed to drain into sewers, the result may be immediate contamination of surface waters. Similarly, when waste oil is improperly disposed of on land, its hazardous constituents may eventually migrate to and contaminate groundwater. Recognizing the environmental risks associated with the improper disposal of enormous quantities of waste oil every year, EPA is presently developing regulations under the Resource Conservation and Recovery Act of 1976 to ensure that waste oil is properly managed. See 45 Fed. Reg. 33094 (May 19, 1980).

[*/] In view of the enormous glut of waste oil, the use of waste oil heaters, even in greatly increased numbers, would have no adverse impact on the use of waste oil for other purposes, which include burning as an industrial boiler fuel and re-refining into lubricating oils. Existing capacity for these reuses falls far short of the volume of recoverable waste oil generated each year. For example, DOE estimates that the re-refining industry can utilize no more than 25 million gallons annually, less than 4 percent of the total volume from automotive sources alone. Statement of Jerome F. Collins, supra.

Providing incentives for waste oil heaters can contribute to the solution of this pressing national problem by enabling establishments that generate waste oil to reuse it in a safe and environmentally acceptable manner. The use of waste oil in heaters like those manufactured and distributed by WOHMA members is environmentally far superior to its indiscriminate disposal. Tests in this country and in Europe have demonstrated that vaporizing-type heaters emit only a small percentage of the lead or other contaminants which waste oil may contain. Indeed, based on these tests and on EPA data concerning motor vehicle emissions, it appears that a typical vaporizing-type heater emits approximately one-tenth the amount of lead in the exhaust from an average automobile using unleaded gasoline. These low emissions rates are the result of the "fixing" of impurities in the slag-like residue which remains in the vaporizing-type heater. That residue is a solid, compact, inert waste which is far more amenable to proper management and disposal than is free-flowing waste oil.

Impact of Energy Tax Credit for Waste Oil Heaters

Projected sales of waste oil heaters in 1982, 1983 and 1984 are, respectively, 15,000, 17,000, and 20,000 units. Based upon the experience of WOHMA members in the marketing of waste oil heaters in this country and abroad, an extension of the energy tax credit to waste oil heaters would substantially increase the sales of those devices. In the domestic market, a 30 percent increase in sales has been observed to follow a 10 percent price discount. This result is confirmed by the much more extensive history of waste oil heater sales in comparable foreign markets. That history shows that a 10 percent discount in the price of such devices typically results in a 30 percent increase in sales volume, while a 20 percent discount results in a 50 percent increase.

In light of this experience, a 20 percent energy tax credit for waste oil heaters could be expected to increase their sales in 1982, 1983, and 1984 by, respectively, 7,500, 8,500, and 10,000 units. A 10 percent energy tax credit would increase sales in those years by 4,500, 5,100 and 6,000 units. The additional units that would be sold during 1982, 1983 and 1984 as a result of a 20 percent credit would, during their first year of operation alone, displace the energy-equivalent of, respectively, 371,250; 420,750; and 495,000 barrels of oil.*/ The additional units sold under a 10 percent credit in each of those years would displace the energy-equivalent of, respectively, 222,750; 252,450; and 297,000 barrels of oil during their first year of operation.

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*/ This calculation is based on a typical heater's use of approximately 1.0 gal/hr. of waste oil per hour during 180 heating days of 12 hours each. Waste oil has an energy content of at least 133,000 Btu/gal. Such a heater would consume 2,160 gal/yr. of waste oil with a total heat content of approximately 287.2 million Btu. Assuming the energy-equivalent of a barrel of oil to be 5.8 million Btu, each such heater would consume the energy-equivalent of 49.5 barrels of oil annually.

These energy benefits would not, of course, be limited to the first year of operation of the additional waste oil heaters which would be purchased as a result of the 10 and 20 percent credits. Each unit would continue to displace other energy sources throughout its useful life. By way of illustration, the 15,600 additional heaters which would be purchased in 1982, 1983 and 1984 under the 10 percent credit would, over a useful life of 12 years, displace the energy-equivalent of almost 9.3 million barrels of oil. The 26,000 additional heaters which would be purchased in those years as a result of a 20 percent credit would displace over 15.4 million barrels of oil during their useful lives.*/

Recommended Modifications

In order to provide an energy tax credit for waste oil heaters, S.750 would have to be modified in two minor respects. First, waste oil would have to be included in the definition of the term "alternate substance." Second, the subcategory of alternative energy property comprising burners which use an alternate substance as their primary fuel would have to be clarified to indicate that space heaters are included therein.

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*/ This is a highly conservative estimate of waste oil heaters' actual useful lives. Such devices in operation in Europe have been shown to have a useful life of up to 20 years or more.

(1) Under current law, an alternate substance is defined as any substance other than oil, natural gas or a product of oil or natural gas. S.750 would clarify that the term specifically includes "petroleum coke; petroleum pitch; synthetic fuels; and any other product produced from any alternate substance, whether or not such product has undergone a chemical change in the process of its production." In order to provide an energy tax credit for waste oil heaters, waste oil would have to be added to the list of substances which qualify as alternate substances.

The list of alternate substances contained in S.750 already includes two other unusable and unmarketable petroleum by-products: petroleum coke and petroleum pitch. Like these substances, waste oil is an unusable waste by-product of petroleum. Thus, adding waste oil to the definition of alternate substance under S.750 would be conceptually consistent with the existing provisions of that bill.

(2) Because waste oil heaters are primarily space heaters, it would also be necessary to clarify the definition of the subcategory of energy property which consists of burners that use an alternate substance as their primary fuel. Under the Internal Revenue Code, any burner which uses an alternate substance as its primary fuel is included in the alternative energy property category. However, the Treasury regulations provide that a burner must be part of a combustor, and that a

combustor is a process heater (such as an oven, a kiln, or a furnace). Because waste oil heaters are space heaters, and not process heaters, it would be necessary to specify--either in the statute or the legislative history--that space heaters also qualify as burners in order to ensure that waste oil heaters would qualify for the energy tax credit. Such a specification would be consistent with the legislative history of the Energy Tax Act, which did not indicate any intent to exclude space heaters from the burner category. The bill or its legislative history should also specify that, in the case of integrated units of equipment such as waste oil heaters, the credit is available for the entire unit. (To attempt to distinguish that part of a waste oil heater which actually produces a flame from the rest of the device would be nonsensical.)

Conclusion

WOHMA strongly endorses the efforts of this Committee to preserve and expand the energy tax credit. Consistent with that policy, WOHMA urges this Committee to modify S.750 so that waste oil heaters will also qualify for the energy tax credit.

Any questions concerning this statement may be addressed to WOHMA's counsel, Timothy A. Vanderver, Jr., Patton, Boggs & Blow, 2550 M Street, N.W., Washington, D.C., 20037, (202) 457-6075.

BEFORE THE
SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION
OF THE
SENATE COMMITTEE ON FINANCE
CONGRESS OF THE UNITED STATES

IN THE MATTER OF THE
INDUSTRIAL ENERGY SECURITY TAX
INCENTIVE ACT OF 1981 (S.750)

STATEMENT OF
RICHARD A. MEHLER, GENERAL COUNSEL
FOR
AUTOMOTIVE PARTS REBUILDERS ASSOCIATION

October 19, 1981

Mr. Chairman and Members of the Committee:

My name is Richard A. Mehler. I am General Counsel for the Automotive Parts Rebuilders Association (APRA) on whose behalf I am appearing today.

I am grateful for the gracious invitation extended to me by your Committee through your Chairman to testify on the Industrial Energy Security Tax Incentive Act of 1981 (S.750).

Allow me an introduction to APRA and the automotive aftermarket. The Association is composed of over 1,000 members actively engaged in business in the automotive aftermarket. The rebuilding of automotive parts is a unique and conservation-oriented industry in the sense that it recycles; that is to say, it takes a used and worn part and through sophisticated techniques developed over the years produces a replacement part that is functionally equivalent to a new part. Rebuilt parts today are a potent factor in the automotive aftermarket.

The $50 billion automotive aftermarket[1] provides the parts and service needed to maintain the over 140 million motor vehicles in operation.[2] Within the aftermarket are the thousands of independent parts and service establishments - - most of which are small businesses[3] -- that currently perform most automotive service. The independent sector includes over 2,700 independent parts manufacturers and rebuilders, 22,000 warehouse distributors and wholesalers and more than 420,000 service and retail parts outlets encompassing chain stores, gasoline service stations, automotive repair shops and body shops.[4]

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[1] Automobile Repairs: Avoidable Costs, Staff Report, House Comm. on Interstate and Foreign Commerce, 96th Cong., 1st Sess. 12 (1979).

[2] Ward's Automotive Yearbook. 161 (1979).

The Energy Tax Act of 1978 (Pub. L. No. 95-618) was enacted for the purpose of encouraging energy conservation and conversion to new energy sources. As the Senate Report noted, "This bill uses tax incentives in an effort to reduce demand for energy, to induce conversion from oil and gas to more abundant domestic energy sources, and to increase U.S. production of a broad range of energy sources." (Senate Report at 3).

The Act allowed a 10% investment credit for six types of so-called "energy property," one of which is recycling equipment. The latter term is defined in the Act as that equipment used exclusively "(i) to sort and prepare solid waste for recycling, or (ii) in the recycling of solid waste."

Unfortunately, the goals of the Energy Tax Act have not been achieved. From the perspective of the automotive parts rebuilding industry, this result is in large part a consequence of restrictive regulations adopted by the Internal Revenue Service which contravene the very purpose of the Act. In final regulations promulgated under the Act, IRS defines recycling equipment as being limited to that equipment used exclusively "to sort and prepare, or recycle, solid waste . . . to recover usable raw materials . . ."[5] (emphasis added). This Association submitted comments disputing this restrictive definition on the grounds that it was inconsistent with the legislative history and intent of the Act. Thus, in the House of Representatives Bill, H.R. 8444, the definition of recycling equipment was not limited to equipment used for the recovery of raw materials. Under the Senate Amendment, the House version was adopted with a modification permitting use of up to 10% virgin materials. And it was this Conference version which was incorporated in the Act in its final form.

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[3] Monopolistic Tendencies of Auto Emission Warranty Provisions, Subcomm. on Environmental Problems Affecting Small Business, House Permanent Select Comm. on Small Business, H.R. REP NO. 1628, 93d Cong.,2d Sess. 1-2 (1974) (hereinafter "Emission Warranty Report").

[4] *Id*. at 1-4.

Our comments reasoned that the credit should apply in any case "where a marketable product is produced in the remanufacturing of post-consumer scrap assemblies." That same reasoning had been urged by the Department of Energy, Office of Industrial Programs in its comments to the proposed rules (see Exhibit A attached hereto).

This Association and its members vigorously support the effort to revise and extend the tax credit as proposed in S. 750. However, a major source of energy conservation will become moribund if the automotive rebuilding/remanufacturing industry is not specifically included in this legislation.

Recently, a two year study was completed by the Center for Policy Alternatives of the Massachusetts Institute of Technology on the potential for energy and resource conservation through rebuilding/remanufacturing. This study found numerous societal benefits from remanufacturing; principal among them is energy conservation. It emphasizes that:

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[5] 46 Fed. Reg. 7287, 7296 (1981)

> Because remanufacturing is able to recapture energy embodied in discarded products and restore it to use, this form of activity might be said to be creating that energy. We have seen evidence that the leverage ratio of energy recovered to energy expended may be in the order of four to five times. 6/

Rebuilding/remanufacturing also results in a dramatic conservation of materials. The M.I.T. study concludes:

> For every pound of new material used in remanufacturing, from six to nine times that amount is recaptured or salvaged. By recapturing iron, steel, copper, aluminum, zinc, lead, tin, plastics and other materials, remanufacturing reduces demand on raw materials sources, and makes a country less vulnerable to shortages of critical materials arising either from depletion of source or from international cartel action. 7/

Numerous other benefits were found to result from remanufacturing, including conservation of capital plant and equipment, stimulation of competition, creation of employment opportunities, and reduction of solid waste disposal problems. 8/

6/ Center for Policy Alternatives, Massachusetts Institute of Technology, "Energy Recapture Through Remanufacturing: Executive Summary", 5 (1981) (See Exhibit B attached hereto)

7/ Id. at 6.

8/ Id.

Summarizing the M.I.T. study, it is evident that:

(1) Rebuilding/remanufacturing is an economically superior approach to energy conservation as it *recaptures* energy as opposed to merely gaining raw materials.

(2) The energy recapture ratio of remanufacturing is in the magnitude of 5:1 (energy savings v. energy spent).

(3) Remanufacturing recaptures as much as 9 lbs. of material for every one (1) lb. used.

(4) There is as much as 90% yield from cores in the remanufacturing process.

Significantly, the M.I.T. study specifically suggests the study and evaluation of investment tax credits for this industry for the purpose of encouraging remanufacturing.[9]

These findings have particular application to the automotive aftermarket which was one of the four markets studied in this project and is described therein as the "most visible example of remanufacturing."[10]

APRA recently conducted a survey of its members regarding expenditures for recycling equipment. The following results were obtained:

1979	$30,303.225
1980	30,889,263
1981 (Projected)	33,676,250

9/ *Id*. at 13,14.

10/ Center for Policy Alternatives, Massachusetts Institute of Technology, "Energy Savings Through Remanufacturing: A Pre-Demonstration Study", 179 (1980).

Of these expenditures, it is estimated that 59% of the total is for purchases of equipment which increased existing recycling capacity.

These figures are indicative of the fact that purchases of recycling equipment in this industry during the past three years have actually declined after adjustment for inflation. It is imperative that this trend be reversed, given the documented conservation of energy and materials, as well as other societal benefits, contributed by this industry. Eligibility for a tax credit under S.750 would most certainly provide a significant stimulus to capital investment in the rebuilding/remanufacturing industry currently forced to operate its facilities with substantially obsolete and worn equipment which it is unable to replace because of the soaring costs of loan capital.

Accordingly, it is respectfully proposed that S.750 be modified as follows: (1) that Section 4(C)(2)(D) specifically include equipment used in the conversion or processing of solid waste into rebuilt or remanufactured automotive parts; and (2) that Section 4(C)(3)(E) define "solid waste" to include used or discarded automotive parts.

Thank you for your interest and consideration.

LAW OFFICES
RICHARD A. MEHLER

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WASHINGTON, D. C. 20036
(202) 828-5770

November 18, 1980

Commissioner of Internal Revenue
Washington, D. C. 20224

Attention: CC:LR:T(LR-165-77)

Dear Sir:

The following comments are offered by the Automotive Parts Rebuilders Association with respect to proposed regulations relating to business investment credit for energy property as published at 45 Fed. Reg. 62496.

These comments are directed in particular to § 1.48-9(g)(1) of the Proposed Rules which defines recycling equipment. The Energy Tax Act of 1978 (Pub. L. No. 95-618) defines recycling equipment in § 301(b)(6)(A) as follows:

> . . .The term 'recycling equipment' means any equipment which is used exclusively--
>
> (i) to sort and prepare solid waste for recycling, or
>
> (ii) in the recycling of solid waste.

The Proposed Rules alter this definition by limiting eligible equipment to that which is used "to sort and prepare, or recycle, solid waste to recover usable raw materials. . ."

EXHIBIT A

It is the position of this Association that equipment used by businesses in the repair and rebuilding of discarded automotive parts qualifies as recycling equipment under the statutory definition. These discarded parts are as much solid waste as are bottles, cans, newspapers and industrial scrap. The fact that the recycling activity results in marketable consumer products does not exclude this activity from favorable treatment under the statute. Accordingly, it is submitted that § 1.48-9(g)(1) is unduly restrictive in its requirement that recycling equipment be used "exclusively to sort and prepare, or recycle, solid waste to recover usable raw materials. . ."

The comment in the introduction to the Proposed Rules that "(g)(1) presents the basic statutory rules and a Senate Report addition for certain onsite equipment" is simply not the case. The statute has no requirement that the equipment be used to recycle solid waste to recover usable raw materials. In support of this limitation, the Proposed Rules reference the Senate Report at 82-83. It is submitted that a careful analysis of the legislative history of the statute will indicate that this discussion in the Senate Report does not support the limitation imposed by the Proposed Rules.

H.R. 8444 defined recycling equipment as "equipment used exclusively to recycle solid waste and to sort and prepare solid wastes for recycling." There is no mention in the House Bill or the Report of the House Ad Hoc Committee on Energy of any limitation of the credit to recycling equipment used to convert solid waste to usable raw materials. The Report of the Conference Committee at 66 notes that under the Senate Amendment the Senate adopted the definition of recycling equipment as set forth in the House Bill with a modification to permit use of up to 10% virgin materials. It was this definition, the House version, which was incorporated in the Act in its final form. Thus, an examination of the legislative history should focus on the House Bill and the House Report, which are dispositive and contain none of the restrictions mentioned in the Senate Report.

The comments in the Senate Report notwithstanding, the limitation imposed by the Proposed Rules is contrary to the very purpose of the Energy Tax Act of 1978. Both the House and Senate Reports on the respective bills emphasize the need for meaningful incentives to encourage conservation of energy. The Senate Report at 3 notes: "This bill uses tax incentives in an effort to reduce demand for energy, to induce conversion from oil and gas to more abundant domestic energy sources, and to increase U.S. production of a broad range of energy sources." Turning to the Act itself, the caption to Title III repeats this emphasis: "CHANGES IN BUSINESS INVESTMENT CREDIT TO ENCOURAGE CONSERVATION OF, OR CONVERSION FROM, OIL AND GAS OR TO ENCOURAGE NEW ENERGY TECHNOLOGY."

The limitation imposed by the Proposed Rules serves as a barrier to, rather than as an incentive for, conservation. It is, indeed, incongruous to deny the tax credit for equipment used to repair and rebuild solid waste into functional products and, yet, to grant the tax credit to equipment used in reducing that solid waste to raw materials which must then undergo energy-consuming processes before emerging as functional articles.

Businesses such as the kind conducted by members of the Automotive Parts Rebuilders Association, who are engaged in the repair and rebuilding of solid wastes, constitute a major segment of the recycling industry in this country. Tax credits for equipment used by these businesses is intended by the Energy Tax Act of 1978, and the Rules promulgated by the Internal Revenue Service should be drawn accordingly. We, therefore, request that § 1.48-9(g)(1) be changed to delete the requirement that eligible equipment be used "exclusively to sort and prepare, or recycle, solid waste to recover usable raw materials" and that the language of the Act itself be substituted.

The Department of Energy put the proposition well in its departmental memorandum dated February 22, 1979, a copy of which is attached. At page 4 of that memorandum, the Department advocates that the credit be extended in any case "where a marketable product is produced in the remanufacturing of post-consumer scrap assemblies." The memorandum goes on to recite a compelling rationale for the granting of the credit to all recyclers who perform operations similar to those performed by the automotive parts rebuilding industry.

Your favorable consideration of these comments is urgently solicited, and we will be glad to furnish

Commissioner of Internal Revenue
Page Four
November 18, 1980

any further information pertinent to the industry that would be helpful in the development of your regulations.

Sincerely yours,

Richard A. Mehler
Richard A. Mehler

ebj

Attachment

cc: Mr. Lawrence P. Mutter

U.S. DEPARTMENT OF ENERGY

memorandum

RECEIVED OCT 10 1980

DATE: February 22, 1979

REPLY TO ATTN OF: CS-40

SUBJECT: Comments on Internal Revenue Service Proposed Rulemaking: INVESTMENT CREDIT FOR ENERGY PROPERTY (Discussion Draft 12/11/78) on Section 301, Changes in Business Investment Credit, of the Energy Tax Act of 1978 (Public Law 95-618)

TO: Geraldine Gerardi

THRU: Douglas G. Harvey, INDUS

The following comments on and suggested changes to the subject Draft Proposed Rulemaking are from the Office of Industrial Programs within the Office of Conservation and Solar Applications and include some industry and EPA, Resource Recovery Division, input.

Referring to page 13 (of The Proposed Rulemaking), Section (b)(1): we suggest that the definition of alternate substance include (1) waste oils (especially used engine lubricating oil) (2) waste industrial gases such as CO (carbon monoxide) which are presently flared and (3) recovered methane from landfills. To accomplish this, change sentences 3 and 4 to read: "an alternate substance is a substance other than: virgin oil (including crude oil and shale oil), natural gas (including geopressurized methane gas and liquified natural gas) and virgin products of oil or natural gas, such as new or virgin refined petroleum products. Examples of an alternate substance include coal, industrial (including agricultural) wastes, municipal wastes, waste solids, liquids, and gases from consuming processes or uses, methane recovered from landfills, and forest residue." Also ADD: "Combinations of alternate substances are alternate substances. For example, coal and RDF" (Refused Derived Fuel).

Referring to page 16, paragraph (8), Handling and Preparation Equipment. In order to include the equipment required for utilization of forest residue as a fuel, the following additions are suggested. Sentence 3: "Handling and preparation equipment must be located at the point the alternate substance is used as or converted to a fuel or feedstock to be eligible." Sentence 6: "Eligible handling and preparation equipment also includes equipment for shredding, chopping, pulverizing, or screening agricultural or forestry by-products at the point of use and at the point of conversion to marketable fuel."

Note, this is consistent with the Act (92 STAT. 3198) (D) which provides for Recycling Equipment "used in conversion of solid waste into a fuel or into useful energy such as steam, electricity, or hot water." No restrictions of location or fuel mix or percent of load are provided in the Act for solid waste energy utilization.

Further, justification for these additions is in 92 STAT. 3196, (3)(A)(vii), where alternative enrgy property means "equipment used for unloading, transfer, storage, and preparation (including, but not limited to, washing, crushing, drying, and weighing) at the point of use of an alternate substance for use in equipment described in clause (i), (ii), (iii), (iv), (v), or (vi)," and noting that clause (iii) is "equipment for converting an alternate substance into a . . . solid fuel . .. .." Therefore, equipment used to process waste to a fuel (or convert waste to a fuel) at the point of conversion is alternate energy property.

Referring to pages 23-27, Specially Defined Energy Property, we suggest that paragraph (e)(1) on page 23 include: "The following twelve types of energy conservation equipment ((2) through (13)) include the required associated ducting, piping, valves, pumps, blowers, controls, and supporting structures." Note: this replaces a similar sentence in (3) Heat Wheels and (10) Preheaters.

Referring to page 25, (6) Waste Heat Boilers, we urge that the requirement for 50 percent or "primary source of energy" be removed, for the following reasons:

(1) This is not required in or derived from any part of the Act (92 STAT. 3197).

(2) This would disqualify many, if not most, of the waste heat boilers. Waste heat boilers can be an important part of industrial energy conservation, even when serving as a partial source of the energy requirement.

(3) There is no apparent reason to treat waste heat boilers differently from recuperators, heat wheels, preheaters, etc.

Referring to page 27, (11) Combustible gas recovery systems, second sentence, add "or chemical process" to read: "Re- [illegible] recover unburned fuel from combustion or chemical process exhaust gases."

Referring to page 27, (13) Other Property (that may be specified by the Secretary), should read: The Secretary may specify other property installed in connection with an existing industrial or commercial facility as specially defined energy property if the property provides the same or greater energy savings per tax credit dollar as the above twelve types of equipment. The principal purpose of the property must be to reduce energy consumed in an existing process. Property will be entitled to the credit only if the taxpayer acquires it or begins construction after November 9, 1978.

The rationale for the above is (1) since the primary purpose of the new equipment is energy savings, eligible equipment should be defined by the energy savings per cost ratio, (2) since the Act does not limit the Secretary to "the same type of property described in paragraph (e) of this section", therefore the third sentence of (13) should be deleted. (3) The fourth sentence of (13) should be changed to avoid a situation where a company has to delay procurement of new energy conserving property until it is specifically qualified.

Referring to page 27A, (f) Recycling equipment, we urge that the first and second sentences have the additions indicated below and that the third sentence be removed, as follows: (1) Recycling equipment is equipment used exclusively to sort, prepare, or recycle solid waste to recover usable raw materials or reconstituted products for commercial purposes or to convert solid waste into a fuel or other useful forms of energy. Solid waste includes, for example, post-consumer waste materials, such as discarded cans and bottles, and industrial fabricating waste materials, such as plastic, paper, and metal trimmings and used tires and other industrial and agricultural wastes.

The reason for removing the third sentence, "Solid waste does not include liquid or gaseous material" is that most solid wastes do contain some liquids.

The reasons for these additions are as follows:

(1) Industrial wastes include agricultural wastes, from 92 STAT. 3198 (12).

(2) Used tires are an industrial waste because most tires become "waste" at the tire recapping or tire retailing industries.

(3) "Recycling equipment includes any equipment which is used in the conversion of solid waste into a fuel or . . . steam, electricity . . ." from 92 STAT. 3198 (6)(D).

(4) Therefore it follows that any industrial or agricultural wastes converted to steam or electricity involve alternative energy property. Further no requirements about the alternative energy property being at "the point of use" or involved with "25 percent minimum" fuel mix are applicable.

Referring to page 28, (2) Eligible equipment. We suggest the first sentence be replaced by: In general, equipment is eligible up to the point that the virgin materials exceed 10 percent of the materials being processed or when the first marketable product is produced, whichever is first.

The second sentence of this section should be augmented, for clarity, as follows, "This point is, for example, the fiber stage in textile recycling, the newsprint or paperboard stage in paper recycling, the container stage in glass recycling, the admixture stage in concrete production for flyash and slag recycling, the blending stage in cement production for flyash and slag recycling, and the stage where a marketable product is produced in the remanufacturing of post-consumer scrap assemblies.

The following is the rationale for including the above statement on remanufacturing: Remanufacturing is a recycling business activity; to illustrate this, consider the recycling of paper. Scrap dealers receive newspapers, auto parts, whole autos, copper wire, plumbing faucets, etc. These products are processed--usually by picking, shredding, screening, magnets, etc. to size and separate the feedstock. In the case of paper, the fibers are reformed and recombined in the paper machine. The recycling process is complete when the roll of paper is removed from the paper machine.

✓

Now consider a potential remanufacturing operation. The worn-out plumbing faucets and valves which are replaced by plumbers are presently removed from the job site and recycled for the value of the copper and brass. The scrap dealer sorts out the faucets and valves which appear to be remanufacturable. These are shipped to a remanufacturing firm who, on a production line basis, disassembles, performs [illegible] necessary replacement parts (recycled and new) to produce marketable faucets and valves. The remanufacturing operation is complete when the marketable faucets or valves are produced. Because this is analogous to the paper recycling example, the equipment used to perform remanufacturing should be eligible up to the point the marketable product is produced or to the point where the virgin content exceeds 10 percent of the total, whichever is first.

The making of a valve from used valve bodies requires substantially less energy than making the valve body from a new casting, even if the casting is 100 percent recycled metal, because of the heat required to melt the metal. When the casting is made from virgin metal, the energy required to benefitiate the ore makes the remanufacturing savings even greater. The national potential for energy conservation through remanufacturing is substantial.

Referring to page 29, (4) Increased recycling capacity, and the applicability to replacement of older, existing equipment. The provision for increased recycling capacity of existing recycling plants is apparently not contained in the Act. We suggest that the eligibility of replacement recycling equipment not be limited to increased capacity. An older recycling plant may be able to modernize by replacing its equipment and become more competitive with virgin material suppliers, due to increases in efficiency, energy use, pollution control, and quality and yield of product. If a plant had to close down or modernize, the additional credit may make the economic difference.

Stuart L. Natof
Program Manager
Office of Industrial Programs

Center for Policy Alternatives
Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

ENERGY RECAPTURE THROUGH REMANUFACTURING: EXECUTIVE SUMMARY

Robert T. Lund
Ron Grand

CPA 81-20 March 1981

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EXHIBIT B

Revised August 1981

FOREWARD

This report summarizes the results of a two-year study by the Center for Policy Alternatives of the Massachusetts Institute of Technology on the energy- and resource-conserving potential of remanufacturing, the structure and economic characteristics of the industry and the opportunity for a remanufacturing demonstration project. This project was sponsored by the U.S. Department of Energy, under Institutional Agreement EX-76-A-01-2295, Task Order Number 53. Cognizant officials in the Department of Energy were Dr. Jerome F. Collins, Chief, Alternative Materials Utilization Branch, and Mr. Stuart Natof, Program Manager.

Three reports have been issued by this study, and these are listed at the end of this document. Three related publications of the Center are also listed.

The information generated by this project has been made available through the kind cooperation of many firms and individuals associated with remanufacturing, and we acknowledge the vital contribution they have made.

The MIT Remanufacturing Project research team has included the following:

Principal Investigator:	Robert T. Lund Assistant Director and Senior Research Associate
Faculty:	Joel Clark Associate Professor Materials Science and Engineering
	Floyd Tuler Visiting Associate Professor Materials Science and Engineering
Research Staff:	Lynn Bollinger Ronald Grand
Senior Staff Assistant:	Sheila K. Bowen
Research Consultant:	Richard Frenkel
Graduate Students:	Christopher Barnett Daryl Beardsley Avinash Deolalikar Richard Kutta Robert Schlingensiepen Doyle Skeels Clinton Stanovsky Raphael Upaa

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The opinions, findings, conclusions and recommendations expressed herein are those of the authors and do not necessarily reflect the view of the Center for Policy Alternatives, Massachusetts Institute of Technology or the U.S. Department of Energy.

ENERGY RECAPTURE THROUGH REMANUFACTURING: EXECUTIVE SUMMARY

INTRODUCTION

Remanufacturing is a promising strategy for preserving the functional value of durable products, in effect giving older products new lives. It has the unique feature of saving multiples of the energy and material inputs to the process by recapturing value remaining in discarded products. It is seen as a beneficial activity for society and a potentially profitable private enterprise.

Remanufacturing is the full-scale disassembly of products, pooling of interchangeable parts, and production-line reassembly in a fashion similar to the original manufacturing process, with some replacement of worn parts. The term remanufacturing does not refer to the unit-by-unit rebuilding of goods except in the case of large items that are originally assembled on a one-by-one basis. The process restores a product to the point where it meets or exceeds original product performance specifications.

Using a variety of research approaches, researchers at the Center for Policy Alternatives at M.I.T. have obtained a comprehensive overview of the structure of present U.S. remanufacturing activities, the operating characteristics of firms in the industry, and the energy and resource conservation potential inherent in remanufacturing. During the past two years this pioneering study of remanufacturing has covered a substantial amount of territory, and has accomplished the following:

1. An understanding of the operating characteristics of remanufacturers, both independent operators and divisions of original equipment manufacturers.
2. An appreciation for the energy and materials conservation leverage present in remanufacturing.

3. An appraisal of the relationships between remanufacturers and their supply and distribution channels.

4. Descriptions of relationships between remanufacturers and orignial equipment manufacturers, and an identification of major areas of difficulty arising in these relationships.

5. Some appreciation of the size of remanufacturing operations and the relative importance of the firms in the economy.

6. Identification of the common characteristics of products being remanufactured and successfully marketed today.

7. A selection of three prime candidate products for consideration in a demonstration remanufacturing project.

8. An identification of the present and potential benefits to society from remanufacturing.

9. Models of remanufacturing systems, both of a specific product area and of remanufactured products in general.

10. Specification of policy implications leading from the information obtained to date.

11. A description of future work required to accomplish: (a) a preliminary engineering feasibility study for a demonstration remanufacturing operation for one of the candidate products and (b) an analysis of possible policy options available to private and public decisionmakers as a means to encourage remanufacturing in the U.S.

The Center for Policy Alternatives has undertaken this project under contract to the Alternative Materials Utilization Branch of the U.S. Department of Energy. Principal Investigator for the study is Robert T. Lund, Senior Research Associate and Assistant Director of the Center. Working with him were faculty, staff and graduate students associated with the Center. Program direction in the Department of Energy was provided by Jerome F. Collins, Chief, Alternative Materials Utilization Branch, and Stuart Natof, Program Manager.

A. PRESENT STATUS OF U.S. REMANUFACTURING

Each step of our research, including the case studies, the survey, and the selection process, has served to profile the typical remanufacturing firm, its products and its environment. A discussion of these observations can be broken down into the following topics: 1) the product, 2) the process, and 3) the market. Details of that profile can be found in the three earlier publications of this study, [1,2,3] but essential characteristics are summarized briefly here.

1. Product

A successfully remanufactured product is a durable end product or a durable component of an end product. It is typically a standard product, with interchangeable parts, that is assembled on a factory basis. The product design tends to be relatively stable, with changes occuring at moderate to slow rates. The characteristic failure mode leaves the product considerably less valuable, but ultimately repairable. Repair is deemed worthwhile because the product typically has a high recoverable value-added relative to the original market price of the product.

The concept of preserving the original value-added of a product is an important feature of remanufacturing. In addition to saving the materials in the product, remanufacturing successfully recaptures the value of 80 to 90% of the energy, capital equipment and labor originally spent in making the product. This element of recapture of value-added distinguishes remanufacturing from recycling, where all of the original contributions of energy, capital equipment and labor are lost.

2. Process

The remanufacturing process is primarily labor-intensive. It tends to require lower skill levels of its employees and pay lower average wages than a comparable new product manufacturer. Of manufacturers surveyed, about 60% of their labor force was either semi-skilled or unskilled. This compares to roughly 40% for durable goods manufacturers as an industry. Because the process does not require complex equipment and because material costs are relatively low, the capital investment requirements are modest.

Remanufacturers rely on discarded products (cores) to supply the largest part of the materials requirement, typically recovering about 80% of gross core weight for reuse in the process. Core availability, though, is a common problem experienced by remanufacturers. The balance of the materials requirement is filled by new replacement parts. Although these new parts account for only about 10-15% of net weight of finished product, they consume an average of 50% of the materials budget. New replacement parts are most commonly supplied by original equipment manufacturers (OEM's).

3 Market

A remanufactured product typically sells for 50-70% of the comparable new product price. It is usually sold with a warranty equal to that of a new product. Along with price, product availability, performance and service are important marketing considerations.

IMPORTANCE OF PRODUCT FACTORS TO POTENTIAL PURCHASES BY MARKET

Rank by Market

FACTOR	AUTOMOTIVE	INDUSTRIAL	COMMERCIAL
Availability	1	1	1
Performance	2	2	2
Service	3	3	3
Price	4	4	3
Appearance	5	6	5
Warranty Terms	6	5	4
Other Factors	7	7	7

Service channels tend to mirror distribution channels, this being dictated in part by the nature of the product. Advertising is aimed at special market segments and is typically low key. There is little general advertising. Remanufacturers view other remanufacturers in the same product areas as their primary competitors. Remanufactured goods are rarely exported and only a small fraction is sold to the federal government. Survey respondants sold only 3.4% of their output abroad compared to 12% for the U.S. economy as a whole, and they sold only 1% of their product to the Federal government compared to 8% for the rest of the economy.

B. SOCIETAL BENEFITS FROM REMANUFACTURING

1. Energy conservation. Because remanufacturing is able to recapture energy embodied in discarded products and restore it to use, this form of activity might be said to be creating that energy. We have seen evidence that the leverage ratio of energy recovered to energy expended may be in the order of four to five times. This calculation was derived from the Annual Survey of Manufacturers statistics for value of shipments and purchased fuels and electric energy. Briefly, energy for remanufacturing represents approximately 0.9% of the value of shipments as compared to 2.6% embodied energy in similar new product manufacture. Since a remanufactured product is on average 60% the price of a new product, the calculation of the ratio is

   $.60 \times \frac{0.9\%}{2.6\%} = \frac{0.54}{2.6}$ or roughly 1:5.

   Given that the marginal cost of creating any new energy production source is higher than the marginal cost of energy sources now in operation, it is to our economic benefit to find means such as this that conserve the energy already invested in our stock of durable goods. The social and political desirability of energy independence has been stressed for the past seven years. Remanufacturing contributes to this goal.

2. Materials conservation. Conservation of materials is both an economic and a political good. There is a materials leverage similar to the energy leverage discussed above. For every pound of new material used in remanufacturing, from six to nine times that amount is recaptured or salvaged. By recapturing iron, steel, copper, aluminum, zinc, lead, tin, plastics and other materials, remanufacturing reduces demand on raw materials sources, and makes a country less vulnerable to shortages of critical materials arising either from depletion of source or from international cartel actions.

3. Productive capacity enhancement. In a sense, remanufacturing "conserves" capital plant and equipment as well. Neither primary nor secondary materials processing facilities are required to produce the parts used in remanufactured assemblies. The net effect is that the capacity of existing plant and equipment is effectively augmented by remanufacturing.

4. Stimulant to competition. Remanufacturing offers products on the market at substantially lower prices (50-70% of new price), and has the effect of broadening the market at the same time that it furnishes price competition to new products in the same market.

5. Employment Opportunities. Although remanufacturing also recaptures the labor embodied in the materials and parts re-used, the remanufacturing process itself is labor intensive. The mean ratio of labor costs to sales dollars for surveyed remanufacturers was .30 as compared to .13 for new manufacturers in the same SIC codes. Further, remanufacturing requires a range of skills, with a substantial number of jobs at low-to-moderate-skill levels providing entry ports into the industrial workforce.

   The geographic spread of remanufacturing suggests that such operations can be located where the labor force is. (See table below) Because of modest capital equipment requirements and the predominantly assembly-type operations, this can be considered a relatively "portable" industry. It may, for instance, be responsive to industrial development efforts of states or regions experiencing chronically high levels of unemployment.

REGION	COUNT	DISTRIBUTION OF FIRMS SURVEYED	DISTRIBUTION OF ALL U.S. MANUFACTURING FIRMS
New England	9	7%	7%
Middle Atlantic	23	18	22
East North Central	25	20	20
West North Central	16	13	7
South Atlantic	11	8	13
East South Central	8	6	5
West South Central	16	13	8
Mountain	7	6	3
Pacific	12	9	15

6. Reduction of Solid Waste Disposal Problems. To the extent that remanufacturing prolongs the useful life of products, the volume of solid waste that must be collected, processed and disposed of is reduced. As was noted in one of our earlier publications, a 33% increase in product life (from 9 years to 12 years, for instance) would reduce the annual contribution to solid waste by 25%[3] Recycling of metal products to reduce their constitutents to their elemental state, by crushing, milling, smelting, refining, etc., is an energy-expensive process, even after the energy expenditures for collection and handling have been accounted for. In the very long run, remanufacturing is not an alternative to recycling, since virtually everything will reach a state where it can no longer be re-used. Remanufacturing, however, does reduce the amount of materials that must be recycled annually.

7. Export potential. Although the avenue of exporting remanufactured products has not had significant use, it remains an alternative worth exploring. In the overseas automotive markets, for instance, a major difficulty in keeping a car or truck in operation is the unavailability, delays and high prices of replacement parts. Remanufactured parts of reliable quality could be more easily available (particularly for older vintage vehicles) at lower cost.

8. Aid to Developing Countries. As an adjunct to our main study of aspects of remanufacturing that relate to the U.S. economy, we have made some preliminary assessments of the potential of remanufacturing as a means of accomplishing technology transfer and capital equipment development in developing countries. Remanufacturing could provide opportunities for training and development of an industrial labor force, technicians and managers. Because of its low capital equipment requirements, remanufacturing does not drain a country's capital funds. Indeed, if capital equipment is remanufactured from cores obtained inexpensively from industrialized nations, remanufacturing can be an inexpensive source of capital equipment. [4,5]

C. PRIVATE INDUSTRY BENEFITS

The societal benefits discussed in the previous section may show remanufacturing to be a useful part of our economy, but these benefits are not the reasons why entrepreneurs are attracted to this activity. The fact is, remanufacturing is good business. It offers definite advantages to individuals and firms who decide to enter it.

First of all, remanufacturing is a profitable business. Our case studies indicate that the opportunity for profit in remanufacturing is considerable. This is not to say that all areas of remanufacturing are equally profitable. Highly competitive product areas such as automobile parts may have lower relative profit margins than other, less developed areas. But the many market sectors in which remanufacturers operate indicate the diversity of profitable opportunities available.

The relatively limited capital investment needed for remanufacturing, as compared to new product manufacturing represents an attractive opportunity for a small business or individual entrepreneurs. The basic activities for remanufacturing are disassembly, cleaning, refinishing and reassembly. Far greater capital is required for conventional product manufacturing processes, and the barriers to entry to compete in original product manufacture are much more formidable.

For the original equipment manufacturer (OEM) several benefits result from remanufacturing. First, remanufacturing is a natural way to expand market potential. The lower price of the remanufactured product may reach or create new customers, thus increasing market share.

Information feedback is a remanufacturing by-product for the OEM. OEM's often have limited knowledge about performance, failiure modes, design weaknesses, and other product problems after the warranty period. The remanufacturer has this knowledge and often alters designs to improve product performance. An exchange of information between product design and remanufacturing groups can be of significance to both the improvement of current products and the ease of remanufacture of future products.

Remanufacturing is an effective way for OEM's to control the identity of their products beyond the warranty period. A remanufactured product may continue to carry the original maker's trademark. It is therefore in the best interest of the OEM to protect the reputation of that trademark. If the OEM remanufactures the used product to original specifications, it ensures that those units in the marketplace represent the highest quality possible.

By extending control of a product beyond its warranty period, an OEM consequently extends its sphere of service offered to the customer. Consumers are more likely to purchase a brand product they feel is backed by a stong service commitment for the life of the product. Remanufacturing can be part of that commitment.

In the pursuit of increased productivity, many manufacturers are introducing labor-saving automation. Rather than force layoffs because of technological change, OEM's may wish to consider remanufacturing as a way that utilizes their surplus labor while broadening their product market.

One final benefit of remanufacturing accruing to private industry is an intangible -- a sense of corporate accomplishment. Many firms responding to the remanufacturing survey were aware of and proud of their contribution to the national welfare through conservation of resources, through the employment of disadvantaged persons, and through the quality of their products.

D. NEW OPPORTUNITIES FOR REMANUFACTURING

The study included the identification of products not yet being remanufactured that would be prime candidates for remanufacture. This task included the identification of as many remanufacturers as could be located and classification of their product lines, and the screening of all durable products for acceptability as potential candidates. Throughout the selection process an attempt was made to identify those common product elements important to remanufacturing. Using these elements as criteria, the list of potential products was narrowed to twenty-one. Along the way, more remanufacturers were discovered, particularly from the market analysis of the group of twenty-one final candidates.

The discovery of more remanufacturers emphasizes the fact that our list of known remanufacturers is far from complete. Also evident from this study is the potential not only for introducing remanufacturing into previously untouched areas, but also for expanding remanufacturing activities in areas where some remanufacturing is currently taking place.

In our preparation for a possible demonstration project, we have sought products not currently remanufactured. None of the final three products selected (motorcycle parts, chain-saws, and garbage disposers) are currently remanufactured, although some chain-saws and some motorcycle parts are regularly rebuilt. All three products are basically consumer products, but, for chain-saws, the most likely remanufacturing prospect lies in the commercial sector of the market. That commercial sector is made up of professional loggers, a relatively homogenous and reachable market group.

The increase in chain-saw sales is in no small way connected to the energy scarcity. As wood has become an important alternative heating fuel, sales of chain-saws have risen sharply. In a similar fashion motorcycles are linked to the energy situation. As gasoline prices rise, motorcycles, with their superior gas mileage, will continue to gain popularity as a means of inexpensive transportation, as distinct from their use as recreational vehicles. These energy links represent perhaps an added bonus to the energy and resources savings already inherent in remanufacturing.

These three products are not considered the only product areas in which remanufacturing can be encouraged. As mentioned, many areas of remanufacturing can be expanded, and it is likely that other new candidate products will be discovered. Microprocessor systems are expected to be future candidates, particularly in the automotive sector, where remanufacturing is well established. It may take some time for the technology to stabilize enough to allow remanufacturing on a mass scale, but some support for the idea is already in evidence. A recent article in The Wall Street Journal cited General Motor's policy for repair of computerized fuel injectors:

> GM isn't asking mechanics to become computer experts, though. If something goes wrong with the computer itself, the mechanic is supposed to replace it with a new one. The malfunctioning computer then is to be sent to a contractor for remanufacture and eventual re-use as a replacement part.*

As products become more complicated and repair labor more expensive, the option to remanufacture will become increasingly attractive and necessary.

E. PRESENT AND FUTURE PLANS OF PROGRAM

Preliminary Engineering Feasibility Study

Based on the findings to date, remanufacturing is seen as a useful strategy for resource conservation and as an economically attractive field of endeavor. This project has as its ultimate goal the demonstration of a commercially viable, privately-financed remanufacturing operation. By carrying the project through to that stage, we will improve public understanding of the potential importance of remanufacturing, give perspective to public policies to encourage its development and growth, and provide information to current and potential remanufacturers.

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* Wall Street Journal, January 13, 1981, page 16.

Since we plan that the demonstration will be a privately funded venture, a considerable amount of "staff work" is needed to inform potential remanufacturers concerning both the opportunities, risks and alternative modes of entry into the business. No one will wish to invest merely on the basis of a product nomination, no matter how careful the selection process. We are now undertaking a preliminary engineering feasibility study to assist people interested in making the necessary commitment to a demonstration. More specifically, the purposes of the feasibility study are:

1. To determine the technical feasibility and requirements, the economic attractiveness, energy conservation implications, and the legal and regulatory constraints of remanufacturing a selected product, and
2. To locate a private firm or individual willing to establish a remanufacturing venture.

In addition to what is proposed here for the primary candidate product, we may wish to launch similar demonstrations for several other products. If the primary candidate is a consumer product, for example, we may wish to examine product opportunities in commercial and industrial product areas as well. If this proves desirable, we may attempt to obtain funding for these purposes to that effect at a later date. We would want to have much of the engineering feasibility study on the first product completed before we attempt to go further with other candidates. In this way we profit from what we learn in the first product study and apply it to subsequent products.

Policy Analysis

With the principal effort of the Remanufacturing Program now being focused on the development of specific demonstration plans, it is desirable to establish a modest separate study that focuses on the private and public policy aspects of remanufacturing. Such a study would seek answers to questions that affect the future of remanufacturing: If remanufacturing is seen to have societal benefits, what are the societal impediments to growth of remanufacturing? What are possible public policy options for encouraging remanufacturing and the use of remanufactured products? What are effective strategies for entry into remanufacturing? How can remanufacturers more effectively promote their own interests in the U.S. and abroad?

These questions, and others of this kind, will be important to later stages of the demonstration project, but they will be even more important to the general promotion of U.S. remanufacturing activities. Given the diffuse nature and low profile of remanufacturing, it will be necessary to develop explicit approaches for making the public aware of the benefits and for convincing decision makers to consider policies that encourage remanufacturing.

With respect to _private enterprise_, the policy areas that should be examined include:

1. Remanufacturing start-up strategies -- for OEM's and for independents.
2. Marketing policies for remanufactured products.
3. Collection, processing and distribution strategies.
4. Relationships between OEM's and independent remanufacturers.
5. Effects of regulation on remanufacturing.

Many _public policy_ alternatives can be studied to evaluate their applicability to the encouragement of remanufacturing. Among these are the following:

1. Modification of federal, state and local procurement regulations to encourage use of remanufactured goods by government agencies or in projects sponsored by the government.
2. Provision of training assistance for unskilled workers.
3. Relaxation of minimum hourly wage standards for entry level jobs.
4. Freight rate preferences.
5. Investment tax credits, rapid depreciation allowances.
6. Small Business Administration assistance.
7. Modification of product labeling regulations that discourage use of remanufactured components.

In addition to these fairly standard approaches that need to be studied, more novel ideas should be sought out and considered. For example, in view of the energy leverage possible in remanufacturing, it might be posible to consider some form of "energy recapture" incentive that recognizes this important contribution to our society. This would encourage remanufacturers to redouble their efforts to rescue a maximum fraction of the cores they process.

The policy study should consider the merits of individual policy choices and should identify the appropriate government agency or agencies for implementing each of the policies recommended.

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STATEMENT OF THE
INSTITUTE OF SCRAP IRON AND STEEL, INC.
ON
S. 750

This statement is submitted on behalf of the Institute of Scrap Iron and Steel, Inc., for inclusion in the records of the hearings on S. 750.

The Institute is a national trade association representing approximately 1,600 processors, brokers and dealers of metallic scrap, and industry suppliers. Institute members process, ship or otherwise handle approximately 95 percent of the iron and steel scrap purchased in the United States and handle equally impressive percentages of the many other metallic scrap materials which are recycled in our economy.

The Institute appears in support of S. 750, which would increase the present energy tax credit from 10% to 20% and would extend the effective date of the credit through December 31, 1986. The Institute is in full agreement with Senator Wallop that "Energy conservation remains one of the most economic, safest and most environmentally sound methods of reducing our dependence on foreign energy sources." The Institute supports Senator Wallop and the other members of the Finance Committee in their efforts to preserve and expand the energy tax credit, which is one of the most important incentives for energy conservation.

If ever there was a program that had two clear "supply side" benefits, it is the energy credit. First, the value of investment incentives, so well recognized in the Economic Recovery Act, is equally potent in this industry. The proposed 20% energy tax credit could provide another significant incentive to invest. But the second, more powerful, ingredient is the huge potential to conserve energy as a result of that investment, thus not only making the investment important, but also making American goods more competitive by reducing the inflationary effect of energy costs on the overall cost of production.

According to the United States Environmental Protection Agency, the energy consumed to make 1,000 tons of new steel from iron ore is 23,347 x 10^6 BTUs; while using scrap iron, the energy consumption is 6,098 x 10^6 BTUs. Thus, the use of scrap instead of ore results in a savings of 17,258 x 10^6 BTUs per thousand tons of steel production. To fully comprehend the significance of the energy savings that result from making steel from scrap rather than from ore, consider that 17,258 x 10^6 BTUs is equivalent to 3,083 barrels of crude oil, or 140,000 gallons of gasoline per 1,000 tons of steel produced. In 1980, American steel mills and foundries purchased 41 million net tons of ferrous scrap for recycling. Using that scrap to make new iron and steel products resulted in an energy saving equivalent to 125.4 million barrels of crude oil, or about the amount of crude oil that America imported from OPEC during one month in 1980.

The point is -- and indeed it is a dramatic point -- that each million tons of scrap iron used instead of iron ore to make new products saves over 3 million barrels of crude oil.

But the benefits associated with scrap iron recycling do not stop with energy. While this bill is designed to encourage energy conservation, it is of great significance and clearly relevant to note that using 1 million tons of scrap iron instead of 1.5 million tons of iron ore and 350,000 tons of coal to make the same amount of new steel, will also result in the following savings (reported by the EPA):

- air pollution effluents fall by 86% (208 million pounds)
- water pollution falls by 86% (102 million pounds)
- water use falls by 40% (6.7 billion gallons)
- mining wastes fall 97% (2.8 million tons)

It is clear that in terms of energy conservation alone, the benefit/cost ratio for such investments is very high. When the additional environmental benefits are included in the equation, the ratio becomes ever more pursuasive. Accordingly, investments in scrap iron and steel recycling equipment should be given the maximum possible encouragement. By increasing and extending the existing energy tax credit for recycling equipment, S. 750 would provide a significant incentive for such investments. Moreover, with certain modifications, the incentive effect of the Bill could be substantially increased.

1. Restore parity for iron and steel recycling equipment:

As originally proposed and as passed by both the House and the Senate, the energy tax credit for recycling equipment would have been available on equal terms to all recyclers. However, as ultimately reported by the Conference Committee, all processors of recyclable materials and all consumers of those processed products, except the users of iron and steel scrap were included.

The ommission of the steel and foundry industries has not only caused asymmetry in the granting of the credits, but has prevented the country from realizing the maximum potential benefits associated with iron and steel recycling.

In recent years, in part through the encouragement of the existing energy tax credit, major modernization and up-grading of scrap processing equipment has been accomplished. Much more will be accomplished if the credit is extended as proposed in S. 750. However, in order to encourage the maximum use of recycled scrap iron and steel, the energy tax credit for recycling equipment must also be extended to the scrap melting equipment used by the steel and foundry industries. Indeed, the recent investments made by the processing industry could come to naught unless there is an expanded market to purchase the material. Accordingly, all recyclable consumers, including steel mills and foundries, should be included in S. 750.

The need for this change is obvious. Without it, the millions of dollars invested in new processing equipment will increase the capacity of the scrap iron and steel industry to produce and upgrade the quality of its products, while the investments of the steel industry in scrap using technology might not be able to keep pace. If the market for scrap fails to increase, the benefits of recycling -- the dramatic savings in energy and sharp increase in environmental quality -- will not occur. There is no energy saving if scrap iron is processed but not used - not recycled. There is no reduction in air pollution, water pollution or water use if the scrap iron is processed but not melted. There is no energy saving unless the mills and foundries make the investments to use the material.

For this reason, the mills and foundries must be provided with an incentive to invest in scrap-using equipment. That can readily be accomplished by deleting the provision in the energy tax credit which denies the credit to equipment used at or beyond the point that iron or steel is reduced to molten state. Such an action would not extend the energy tax credit into new and possibly questionable areas - rather, it would merely serve to put all users of recyclabe materials on an equal basis.

2. Provide an energy tax credit for gondola cars used in the transportation of scrap iron and steel.

The Institute has a second suggestion which is as important as the first, but which admittedly would extend the energy tax credit into areas not previously envisioned. Specifically, the Institute suggests that the energy tax credit be extended to include investments in railroad gondola cars.

To understand this proposal, some background on the nature of the scrap iron industry is necessary. Scrap iron moves by gondola (and virtually only by gondola) from the point of origin to the processing facilities (at times) and from the processors' facilities to the mills and foundries (most of the time). Unfortunately, the gondola is a general purpose car, while the railroad industry, when it is investing in cars at all, prefers to invest in special purpose cars. As a result, over the last decade, far more gondola cars have been scrapped than have been added new, and the gondola fleet is becoming ever smaller and smaller.

Because of the dwindling supply of gondolas, whenever an upturn in steelmaking occurs, the railroad delivery system is taxed immediately and the mills and foundries find it very difficult to obtain the needed scrap. Thus, for want of a viable logistics system, the mills and foundries find their productive ability challenged -- and during the most critical times. It is obvious that as the size of the gondola fleet continues to decrease and potential scrap usage increases, the consequences of the inadequate railroad gondola fleet will become more severe each time that there is an upswing in steel production.

What do gondola investments have to do with energy conservation? First, without commenting on the question as to whether railroads or trucks are ultimately more energy efficient, it is important to note the apparent energy efficiency of the railroads in handling large volumes of bulk shipments. Anything which would strengthen carriers that use energy more efficiently is certainly in keeping with the concept of S. 750. But, second, and more important, is the fact that investments by scrap processors and steel mills and foundries will not be able to fully realize their energy saving potential unless the scrap is able to move in volume when it is needed. Such movement is impossible today. If the tax credit is extended to the mills and foundries, the demand for scrap materials will grow, and it is obvious that the logistics sytem must grow as fast or faster if the energy conservation gains are to be realized.

Most gondolas are loaded with scrap iron during some part of their service life, and nearly 40% of all gondola movements are scrap iron. However, the gondola, as a general purpose car, is used indiscriminately in the car fleet for products other than scrap. These other movements include finished steel, rock, sand and gravel. Absent an ability on the part of the carrier to dedicate specific cars that are purchased under the tax credit program to scrap iron and steel use, it would be a major step forward to allow a credit of 8% (20% times 40%), based on the average usage of such cars for scrap iron movement.

A combination of a 20% tax credit for the processor of recyclable materials, an extension of the credit to the user of recyclable iron and steel scrap, and the creation of a special credit for the purchase of railroad gondolas to move the scrap that will be demanded, would create a powerful tool in the battle to control energy costs and energy availability. If this program is able to create a demand for (and the ability to deliver) 1 million more tons of scrap yearly, the energy saving would be the equivalent of 3 million barrels of crude oil. If the program leads to a total scrap demand of 51.3 million tons (the tonnage used in 1974 but never again approached), the energy saving over current levels would be an estimated 33 million barrels of crude oil, or 1.5 billion gallons of gasoline. These numbers are staggering, but they are all attainable.

CONCLUSION

The value of the energy tax credit is beyond challenge. As has been stated repeatedly of late, government revenue can be increased in two ways. The historical way was by raising taxes. However, the newer concept is to increase revenue by lowering taxes so that business will invest and people will spend, thus increasing the net incomes of all. These increased incomes will in turn result in increased government revenue. The opportunity to test the supply side concept is more dramatic in the energy tax credit area than in virtually any other area of legislation to come before the Congress. In this one package is the supply side inducement to invest in energy conserving techniques which will yield jobs, etc., combined with the huge energy savings that will lead to the relative lowering of American production costs.

WINDFARMS

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November 2, 1981

Honorable Malcolm Wallop
Chairman
Subcommittee on Energy and Agricultural
Senate Committee on Finance
Washington, D.C. 20510

Windfarms Ltd. appreciates the opportunity to provide its comments to the Subcommittee on S. 750 and related matters affecting the Investment Tax Credit and Energy Tax Credit now available to Windfarms' developing wind energy projects.

As introduction, Windfarms Ltd. is a San Francisco based corporation, actively engaged in developing large scale wind energy projects. The output of Windfarms' projects is sold to public utilities for ultimate distribution at retail to their customers.

Windfarms Ltd. has under contract, and actively is developing major wind energy projects in Hawaii and northern California. It owns sites in, and intends to extend its activities to, southern California and Oregon in the immediate future.

Windfarms currently has under contract, and in active development: 1) 80 megawatts of turbine generators to be installed on the north shore of Oahu for the Hawaiian Electric Co. These machines will begin commercial operation in 1984. This project will provide almost 10% of Oahu's electrical requirements. 2) A 10 MW project for the Maui Electric Co. 3) A 4 MW project for the Hawaiian Electric Light Co., located on the "Big Island" of Hawaii.

Most recently, Windfarms contracted with the Pacific Gas & Electric Co. (PG&E) and the State of California Department of Water Resources (DWR) to provide PG&E and DWR with 350 MW of wind turbine generation from sites in northern California. For reference, this project will be approximately one-third the size of an average 1,000 MW nuclear plant, and will provide energy for more than 200,000 California homes.

Windfarms is engaged solely in the exploration, development, production and marketing of wind resources. Recent federal legislation, including the Public Utility Regulatory Policies Act of 1978, the Energy Tax Act of 1978 and the Crude Oil Windfall Profits Tax Act of 1980 have done much to support and encourage development of alternate resources by private companies such as Windfarms.

Now, however, we face the Administration proposal to repeal the energy tax credits. The enactment of such a proposal would, for all intents and purposes, shatter our industry. We have worked and reworked our numbers and, at this point in the industry's development, I can tell you, without qualification, that our wind projects will not be feasible without the present energy tax credit.

The tax credits are needed now to reduce the effective cost of prototype and development equipment to economic levels. It is incredible to Windfarms that a repeal proposition would surface at this critical developmental stage, particularly in light of the massive tax subsidies which are available for conventional fuels. Perhaps, at this time, with the so-called oil glut, some will remain passive to our future energy needs. However, it is clear that in the future, if we do not have alternative energy sources, shortages could leave us vulnerable to the dictates of others.

By making first generation machines economic, the tax credits pave the way for second generation machines, which in the late years of this decade and thereafter will stand alone and compete economically, without subsidies, against nuclear, coal and fossil fuel generation. Windfarms greatly appreciates the efforts of this Subcommittee and its members, who have gone on record against the repeal of the tax credits.

With regard S. 750, windfarms notes that although the bill would increase the energy tax percentage from 10% to 20% for certain alternative energy property, the proposal does not include wind property. We endorse the increase in percentages but believe that such an increase should also apply to wind property. In reality, economics and risk dictate that the energy tax percentage be even higher which, as you know, has previously been proposed in the Senate.

We also note that under S. 750 the expiration date of tax credits affecting certain energy property (again not including wind property) would be lengthened. We support extending the expiration dates of the energy tax credits since many of these projects are long term in nature. With regard to the wind property energy tax credit, which otherwise would expire at the end of 1985, we would suggest that the credit also be extended through 1990.

We wholeheartedly endorse the concept contained in S. 750 of "associated property", which would become eligible for the energy investment tax credit. Such property is integral to the development of the alternative energy resources and will serve notice to the Internal Revenue Service that its interpretations of the energy tax credits are unduly restrictive.

Finally, we note with great interest your expansion of the timetable for affirmative commitments, which enables entities to secure access to energy tax credits so long as certain significant steps were taken prior to their expiration. We find, as one of the major defects in the present law, the fact that renewable energy property is not endowed, as are other energy properties, with affirmative commitments statutory language. In other words, for renewable resources, all property must be placed in service prior to the expiration date of the tax credit in order to obtain that credit. We strongly urge the Subcommittee to amend S. 750 to include affirmative commitments language similar to that outlined in the bill for other property to give renewable energy property an affirmative commitment backup through 1994, and to include wind energy properties within its provisions.

Let me again thank you for your efforts in supporting the energy tax credits and the alternative energy and conservation industries in general. We appreciate having the opportunity to share our views with you.

Sincerely yours,

Ivan Lewis Gold

Vice President and
General Counsel
Windfarms, Ltd.

Statement of Russell F. McKinnon
Executive Vice President
Automotive Dismantlers & Recyclers Association

Before the
Subcommittee on Energy and Agricultural Taxation
Committee on Finance

October 30, 1981

On S. 750

Mr. Chairman and members of the Subcommittee, my name is Russell F. McKinnon. I am Executive Vice President of the Automotive Dismantlers and Recyclers Association (ADRA). I am accompanied by William E. Sudow, a partner in the law firm of Wyman, Bautzer, Rothman, Kuchel & Silbert, the Association's counsel. We would like to thank the Subcommittee for providing us with the opportunity to testify regarding the 1978 energy tax credit provisions, and in support of Senator Wallop's proposed revisions and extensions of the investment tax credits in S.750.

ADRA is a trade association representing small businessmen across the nation who specialize in the dismantling and recycling of unserviceable motor vehicles. ADRA has over 5,500 members and the industry as a whole includes over 17,000 business establishments with annual sales of between 6 and 8 billion dollars.

The member companies comprising ADRA provide a vital service to the American consumer and driving public. Each year, our members dismantle 7-8 million inoperable motor vehicles into parts and components which in turn are sold at substantial savings to customers of all kinds: service stations, repair shops, auto parts rebuilders, car dealerships, collision shops and retail customers. As a result, the 17,000 establishments in our industry make an important contribution to the economic and environmental well being of the U.S. - not only through saving consumers substantial sums in car repairs and in helping to keep city streets and neighborhoods free of unsightly wrecked vehicles, but also in another important way: by dismantling cars and trucks and recycling their parts, our industry saves the U.S. an estimated 80 million barrels of oil each year that otherwise would be used up in the manufacture of identical new parts.

The Automotive Dismantling Industry

The automotive dismantling industry is probably the only industry in the world that recycles 100% of its raw materials - in this case inoperable cars, trucks and other motor vehicles. Allow me to explain this by briefly outlining the steps involved.

After a wrecked vehicle is purchased by an auto dismantler, the first step is to remove all reusable parts such as the starter, alternator, engine, transmission, tires, wheels, undamaged glass, and various body components including doors, hood, fenders, bumpers and interiors. These parts and components are then cleaned, tested, inventoried, and sold to various customers such as new and used car dealerships, body shops, automotive repair shops and individuals.

Next, mechanical and electrical parts which are not in reusable condition but are rebuildable are sold to rebuilders as "cores." We are the rebuilding industries' major supplier of "core" parts.

Our industry has found that there is a substantial market for the used parts which dismantlers generate through this recycling process. Used parts are reliable and literally road tested. And, in most instances, they cost less than half the price of comparable new parts, benefitting every segment of the population.

Finally, the remaining hulks of the stripped vehicles are flattened for easy shipment to a shredder where they are reduced into raw materials such as iron, steel, aluminum, platinum, lead, and zinc. As you can see, this is 100% recycling.

Substantial amounts of energy are saved through the automotive dismantling and recycling operation. For example, the American Iron and Steel Institute estimates that the recycling of scrap requires only 50% of the energy used in the manufacture of iron from virgin ores. And, the Aluminum Association estimates that recycling scrap aluminum saves 95% of the energy required to produce aluminum from raw bauxite ore. Furthermore, the EPA estimates that when scrap steel is used in place of virgin iron ore, there is an 86% reduction in air pollution, a 76% reduction in water pollution, a 97% reduction in mining wastes, and a 40% decrease in fresh water consumption. The automotive dismantling and recycling industry is proud to play a major role in contributing these benefits to the U.S.

The Energy Tax Act of 1978

ADRA believes that the energy investment tax credit provisions of the Energy Tax Act of 1978 played an important role in the expansion of the industry's recycling capacity and contributed to a meaningful increase in energy conservation.

As you are aware, section 48(1)(6) of the Energy Tax Act authorized a 10% Energy Investment Tax Credit for "recycling equipment." As will be discussed more fully below, "recycling equipment" was defined in a way which limited the special tax credit to equipment which was used to reduce inoperable vehicles to scrap. Nonetheless, the tax credit was an important incentive for investments in expensive energy saving equipment.

For the average dismantler, most of this equipment was quite expensive. For example, an auto body crusher which flattens an auto hulk into a "slab" of manageable size may cost $18,000; a metal baler may cost as much as $85,000. Our members, and automotive dismantlers generally, are primarily small businessmen. Most of our members had annual gross sales of under $1 million last year; and half our members had sales of less than $500,000. For these businessmen, the energy tax credit was a major factor in their decisions during the last year to invest in new equipment to expand their recycling capacity. In fact, in our judgment, many of our members would not have invested in this new equipment had it not been for the additional energy tax credit.

Because our Association is aware of the impact of the tax credit on decisions by automotive dismantlers to purchase recycling equipment and because we see what these decisions have meant in terms of increased capacity to recycle used vehicles into only one of the three products our industry produces, scrap metal, we cannot understand why some officials have termed the credit "ineffective" and why they have called for its repeal. Clearly, it has been highly effective and has stimulated and rejuvenated this industry. Clearly, we cannot be complacent about measures to conserve our scarce energy resources. We should not forget that one of the reasons the so-called "energy crisis" does not seem as critical today as it may have been a few years ago is that energy consumption has been curbed through a heightened public awareness of the importance of conservation measures such as recycling. We are, however, still dependent on foreign oil, a situation that will not change for years. Although there are domestic fuels and alternate sources of energy which may provide the long-term solution, there is still a critical need to reduce our immediate energy requirements through greater conservation and energy efficiency. As I am sure you are all aware, a report released in 1980 by the National Science Foundation stated that the U.S. could achieve the greatest short term reduction in energy use by conservation measures.

ADRA strongly supports, therefore, the provisions of S.750 which extend the energy tax credit provisions and increase the amount of the credit to 20%. These provisions are important because one of the major impediments to investments in auto recycling equipment is a lack of available capital. The automotive dismantling industry traditionally has consisted of small, labor intensive, family-run operations. Recycling equipment costs represent a high proportion of gross income. Tax credits may mean the difference between buying and not buying. And, of course, each purchase represents an increase in the nation's total recycling capacity.

Investments for Equipment to Recycle "Re-Usable" Parts

ADRA believes that one of the short-comings of the 1978 Act is that it limited the credits to equipment used to recover "raw materials", S.Rep. No. 529, 95th Cong., 1st Sess. (1977). This meant that equipment used in the recycling of "re-usable" items was not eligible for the credit. ADRA believes this was a critical oversight because even more energy is conserved through the recycling of used parts than by recycling scrap metal.

For example, very little energy is required to strip parts from a wrecked or inoperable vehicle - most of the energy is in the form of labor. These parts require no significant machinery or manufacturing. Generally, energy is consumed only to separate the re-usable part from the inoperable vehicle, clean it, test it, and in some instances rebuild it.

However, if a wrecked vehicle is not dismantled into parts, but instead is scrapped, substantial sums of energy are still required in smelting, milling, shipping, manufacturing and parts assembly to make the same parts that were scrapped. This doesn't make much sense.

ADRA believes that this source of energy conservation should be encouraged and that the definition of "recycling equipment" should be broadened to encompass equipment used to recycle used parts. Senator Wallop's bill appears to correct this oversight; however, we would like this made even more explicit by a specific reference to the recovery of reusable automotive parts.

Working with the Automotive Parts Rebuilders Association and the Automotive Service Industry Association, we have drafted language which we believe will make clear that equipment utilized to recycle usable parts would be eligible for the tax credits:

> (A) In general - Subparagraph (D) of section 48(1)(6) (relating to inclusion of certain equipment) is amended to read as follows:
>
> "(D) Certain Equipment Included - The term 'recycling equipment' includes any new or replacement property which is used in the conversion or processing of solid waste into a fuel or into useful energy such as steam, electricity, or hot water and any property which is used in the processing of solid waste to recover and store other reusable resources and materials, including but not limited to paper, ferrous metals, non-ferrous metals, and glass, and reusable parts and components.

We appreciate the opportunity to express our views on the energy investment tax credits. We hope that the Committee will continue the Congressional initiative of 1978 to encourage energy efficiency. We believe that these incentives should be applied equally to the diverse methods of recycling motor vehicles so that the purpose of the Act can be served more completely.

TESTIMONY RELATED TO HEARING ON INDUSTRIAL AND COMMERCIAL ENERGY TAX CREDITS

The Treasury Department has indicated that they are considering a change in or elimination of the energy tax credits. We believe that the present 15% energy tax credit when added to the 10% investment tax credit is an essential economic element in developing the market for solar industrial process heat in the USA.

The Luz Group of companies has successfully sold three solar powered industrial process heat installations in the USA. These are the first and only large solar industrial installations sold to date without federal government financial subsidies. We believe that this qualifies us to speak on the subject the important role of tax credits in carrying out the Administration's economic and energy programs. The critical elements in concluding these solar system sales have been the following:

- development of a technically superior system;
- use of third party financing combined with a 20-year steam sale to the industrial user; and
- availability of 25% tax credits (10% investment tax credit plus 15% energy tax credit) to the third party financing.

We believe that our new industry, solar industrial process heat, can make a significant contribution toward reducing USA dependence on foreign oil. However, our experience to date in the market place leads us to believe that the present energy tax credits are essential to launching this new industry. Our sales would simply not have taken place and our manufacturing business would not exist without tax credits. In time, probably 1985-89, with (i) reduced R&D expenditures; (ii) mass production cost savings; and (iii) continued, stable tax credits through 1985, this new industry will be on a firm economic foundation and will be able to function successfully without tax credit support.

In support of our position we submit the following information:

Attachment A

Summary of the economics and the key role of tax credits in the development of the solar industrial process heat equipment industry. This data shows the short term dependence of our solar industrial process heat industry on tax credits. It also indicates that by the period 1985-89 solar source industrial process heat will successfully compete with fossil fuels.

Attachment B

Excerpts from Lawrence Livermore National Laboratory Report #SOL-80-270 outlined by William C. Dickinson entitled "The Role of Financing in the Marketability of Capital Intensive Solar Technologies for Industry."

Attachment C

Executive Summary of a Theodore Barry & Associates report dated June 1981 entitled "Luz System One Technical Evaluation" prepared by James B. Ayers, Theodore Barry & Associates partner in charge of its solar energy projects and Dr. David W. Kearney, former Program Chairman for industrial process heat at the national Solar Energy Research Institute.

ECONOMIC SUMMARY
SOLAR INDUSTRIAL PROCESS HEAT

Market Size

As reported by the Solar Engineering Research Institute, the industrial sector of the economy is the largest consumer of energy in the United States, consuming approximately 37% of the gross energy demand of 77 quads annually. A quad of energy is equal to one quadrillion BTU's and is approximately equivalent to the energy contained in 200,000,000 barrels of petroleum. Energy used to produce industrial process heat accounts for 50% to 70% of total industrial demand for energy. Industrial process heat is thermal energy used in the preparation and treatment of goods in various manufacturing processes.

The application of current solar energy technology is most cost effective at intermediate temperatures below 550 degrees Farenheit (288 degrees Centigrade). Approximately 27% of industrial process heat requirements fall in this temperature range. Although current solar technology is not cost effective at higher temperatures, solar energy may be used for preheating when higher temperatures are required. Solar energy may be used to heat steam (or other heat transfer medium) to 482 degrees Farenheit (250 degrees Centigrade), after which conventional sources may be used to achieve the higher temperatures required. If preheating to 482 degrees Farenheit in cases where higher temperatures are required is included, approximately 51% of industrial process heat can be supplied by applying current solar energy technology. Accordingly, the potential market for solar generated industrial process heat is in the range of 3.85 to 5.85 quads or 770,000,000 to 1,170,000,000 barrels of oil annually.

The major manufacturing markets for use of solar generated industrial process heat are concentrated in food processing, textile manufacturing, chemicals, paper and pulp products, petroleum products, aluminum anodizing, and secondary and tertiary oil recovery.

Solar Industrial Process Heat Potential Impact on USA Energy Consumption

Description	Quads of Energy	% of Total	$ Value (@$35 bbl. oil)
Total Annual Consumption	77.0	100.0	$ 539.0 billion
Industrial Section:			
- Process Heat	17.0	22.0	$ 120.0 billion
- Other	11.5	15.0	$ 80.0 billion
Solar Industrial Process Heat:			
- Direct	4.6	6.0	$ 32.3 billion
- Preheat	4.1	5.3	28.7 billion
	8.7	11.3	$ 61.0 billion

System Cost and Revenues

The Luz Group commissioned in 1980 a study of all "IPH tracking parabolic trough collectors" in the USA. The purpose was to determine the experienced, installed cost in relation to BTU output capacity. This study identified 33 qualifying installations over the five year period of 1977 through 1981. From these 33 installations we developed a statistical power curve that can be used to project future installed system costs. The following table summarizes the results of the study:

Cost Per MM BTU Annual Output

Year	No. of Units	Cost Range	Average Cost	Power Curve Projection
1977	1	$2242	$ 2242.0	$ 2010.3
1978	5	140-915	542.4	731.4
1979	8	59-1373	448.0	404.8
1980	5	239-490	327.8	266.1
1981	14	84-306	170.4	192.2
1982	--	--	--	147.3
1983	--	--	--	117.6
1984	--	--	--	96.8
1985	--	--	--	81.5
1986	--	--	--	69.9
1987	--	--	--	60.8
1988	--	--	--	53.6
1989	--	--	--	47.7
1990	--	--	--	42.8
1991	--	--	--	38.7
1992	--	--	--	35.2
1993	--	--	--	32.2

There are a number of econometric models that forecast energy costs 20 to 25 years forward. One of the more creditable of these is published by Data Resources Inc.

One can calculate, using this energy price forecast and assumed fossil fuel energy conversion efficiencies, the competitive cost of fossil fuel source industrial process heat on a per million BTU basis. A comparison of these costs with the installed per million BTU capacity cost of solar source industrial process heat systems, gives a meaningful insight as to the point in time when solar fuel will be competitive with fossil fuels. The following table indicates that solar will compete successfully in 1985-87 with electricity and in 1986-88 with natural gas and residual fuel oil if one assumes that capital investments require a four-to-five year pay-back.

Solar Industrial Process Heat
Pay-back on Installed Systems

Year	Solar System Cost per MM BTU	Electricity		Natural Gas		Fuel Oil	
		Operating Cost/MM BTU	Pay-back Period	Operating Cost/MM BTU	Pay-back Period	Operating Cost/MM BTU	Pay-back Period
1980	266.1	10.61	--	3.79	--	4.95	--
1981	192.2	12.38	--	4.66	--	6.88	--
1982	147.3	14.15	8	5.58	12	7.94	--
1983	117.6	15.85	7	6.83	10	9.01	--
1984	96.8	17.93	6	8.31	8	10.00	8
1985	81.5	20.33	5	9.94	7	11.14	6
1986	69.9	22.52	5	11.89	5	12.55	5
1987	60.8	24.87	4	13.99	4	14.06	5
1988	53.6	27.35	3	16.29	4	15.75	4
1989	47.7	30.06	2	18.94	3	17.60	3

Attachment A

EXCERPTS FROM

The Role of Financing in the Marketability of Capital Intensive Solar Technologies for Industry*

William C. Dickinson
Lawrence Livermore National Laboratory
Livermore, California

SOL-80-270
November 21, 1980

ABSTRACT

Three methods of financing large, capital-intensive, industrial solar systems are examined: conventional end-user financing; conventional lease financing; and the solar management company/limited partnership (SMC). The primary disadvantage of the first method is the large capital investment required of the end-user. The availability of investment capital is limited and other investment priorities usually are dominant. In the latter two methods the end-user is not required to provide any front-end capital. The SMC structure appears particularly attractive in that the end-user pays only for solar energy delivered to the process and is not required to operate and maintain the system. However, certain types of initial government assistance will be needed to make this financing technique feasible.

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*This work is supported by the Office of Solar Applications for Industry, U.S. Department of Energy.

Attachment B

In a recent study entitled, "The Role of Financing in the Marketability of Capital Intensive Solar Technologies for Industry," conducted by William C. Dickinson of the Lawrence Livermore National Laboratory, Livermore, California, which was funded by the Office of Solar Applications for Industry, U.S. Department of Energy,[1] it is stated:

> "Over the past several years the cost in constant dollars of industrial solar systems for providing hot water, hot air, and intermediate temperature steam has been steadily decreasing. Over this same period, the cost of oil and gas has been rapidly increasing. .... the present levelized cost of solar generated process heat from commercially available systems, determined on a life-cycle cost basis and with available government incentives, is now within a factor of two of the present levelized cost of distillate oil.
>
> "With this situation in mind, how can the federal government assist in eliminating the barriers to a massive penetration of capital-intensive solar systems into the industrial process heat market over the next few years? Perhaps the major barrier is the capital intensive nature of large-area solar systems. Even if it can be demonstrated that solar generated heat is fully competitive with fossil fuel on a life-cycle basis, there is little impetus for the industrial plant manager to invest several million dollars in a solar system. The availability of investment capital as well as the high cost of that capital represent major road blocks to industry. Investments generally must meet stringent pay-back criteria. Priorities are generally given to investments in expansion of plant capacity and investments mandated by government agencies such as EDP and OSHA.

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[1] SOL-80-270, November 21, 1980, p. 2-4.

"Another barrier to the acceptance of solar systems by industry is the traditional way that industry purchases energy. Energy constitutes a necessary expense, along with labor and materials, in the manufacture of a product. Each of these three elements is a tax deductible operating expense that represents a certain fraction of the consumer price of that product. Any increase in the cost of energy, labor, or materials can be directly flowed through as an increase in the price of the product in order to maintain the same profit margin. The purchase of a solar process heat system would require the end-user to capitalize and amortize the cost of energy rather than expensing it and this is generally not an attractive alternative.

"Since the plant manager is accustomed to purchasing energy on an annual basis, with minimal front-end investment costs, the challenge for the solar community, with necessary help from the state and federal government, is to provide a marketing mechanism to make this possible. It is the contention of this paper that a substantial penetration of solar systems into the industrial market can only be expected when solar generated energy can be purchased in a similar way that fossil fuels and electricity are now purchased."

After analyzing the economics of conventional end-user financing, conventional lease financing and the solar management company/limited partnership structure, the study concludes:

"There is a strong likelihood that industrial solar systems will not appear attractive to the typical end-user as long as they require large front-end capital investments. This is because investment capital is generally scarce and, also, because the end-user would prefer to purchase solar energy as he purchases electricity today.

"To bring about rapid market penetration of these multi-million dollar systems over the next few years, the solar management company/limited partnership structure appears to have the following important advantages:

"- The end-user is not responsible for the purchase, installation, or operation of the solar system but only pays for delivered energy. This payment constitutes a tax-deductible operating expense as does the purchase of fuel.

"- Equity investors in high income tax brackets would find this type of tax-advantaged investment very attractive. It would make risk capital available for investment in these systems.

"- The increased sales volume that could result from this method of financing would lead to lower cost systems which in turn would make other financing methods, such as leasing, more attractive.

"The advantages to the government of encouraging market penetration of industrial solar systems are obvious. It would result in substantial savings of fossil fuel and in the establishment of a healthy solar industry with the creation of many jobs. Additionally, it would establish a major new capital investment opportunity in the private section. For this to come about however, the government will need to provide considerable assistance, particularly in the initial phases. In addition to the tax incentives presently provided, the following types of government assistance will be required:

"- Legislation must be passed to exempt investments in industrial solar systems from the at-risk provision in present U.S. tax law. (The precedent has already been established for real estate investments.)

"- Some type of government warranty insurance will probably be needed to protect the solar manufacturers from taking undue risk in providing the necessary performance warranties on their systems. Ths will be particularly important for the early systems where there is little operating experience.

"- An existing or new government agency must be empowered to make government guarantees available to lending institutions for providing the large amounts of necessary debt capital."[2]

Whereas the study concludes that additional incentives are required to make solar energy a viable alternative source of energy, the proposed elimination of tax credits would have the opposite effect. While no one would argue with limitation of tax credits in the case of an abusive tax shelter, such as, for example, where the purchase price of the industrial solar system is artificially inflated, the Internal Revenue Service would seem to possess an adequate arsenal of weapons to police the potentially abusive tax shelter transaction without frustrating Congress' countervailing energy policy. The proposed elimination of energy tax credits would have such an effect and, therefore, should not apply to "solar energy property".[3]

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[2] Id. at p. 19-21.

[3] I.R.C. Sec. 48(l)(4) defines the term "solar or wind energy property" to mean "any equipment which uses solar or wind energy (A) to generate electricity, (B) to heat or cool (or provide hot water for use in) a structure, or (C) to provide solar process heat."

LUZ SYSTEM ONE TECHNICAL EVALUATION
FOR
LUZ INTERNATIONAL LTD.

June 1981

Theodore Barry & Associates

Attachment C

EVALUATION SUMMARY

"This evaluation indicates that the Luz System One should, when development is complete, be technically equal or superior to competitive systems in terms of performance, durability and reliability. This expectation, however, requires confirmation through collector testing and field demonstration experience. Several stages of design and verification exist between collector conceptual design and demonstrated system performance at an industrial site. In brief, these stages include collector development, fabrication and test, prototype system design, installation and test, and full scale system design, installation and measured performance over time.

"The first engineering prototype was completed and tested in August-September, 1980. After a detailed design evaluation, the second engineering prototype was designed and fabricated, culminating in a full eight-panel assembly being installed at the Luz facilities in April, 1981. This prototype of the commercial Luz System One collector is the basis of the current evaluation. Performance testing of this assembly by Luz is in progress and is scheduled for completion by late June, 1981. A series of field installations will be installed and operated starting in the fall of 1981, located both in the United States and in Israel. The first operational results over a period of several months' operation should be available in early 1982.

"Uncertainties exist in several specific design areas, as discussed in this report, and there is no substitute for demonstrated collector and system performance. Previous solar industrial process heat installations using other collectors have experienced unexpected operational problems. However, evidence at this stage indicates that the

Luz System One design is based on both knowledge of previous component and system failures and sound engineering design principles. Component and material design choices have been made with long lifetime and reliability as major criteria. An important characteristic of the Luz approach is that Luz System One is an integrated, turn-key system, which allows the opportunity for careful system tradeoffs and improvements based on field experience. These observations, in conjunction with the apparent commitment and ability of the organization to respond to the need for design modifications, warrant confidence in this endeavor.

"In conclusion, performance expectations of the Luz System One must at present be based on preliminary test results; the design features of the system; comparison of these features with other systems already operating; the likelihood of success of unique aspects of the Luz collector; and an assessment of the abilities of the Luz staff to design, manufacture and install systems with sound engineering knowledge and practice. The present evaluation has overviewed the technical details of the system design, the capability and dedication of the staff, the commitment of the management, and planned steps to achieve Luz goals. Based on this evaluation, it is our judgment that successful achievement of the design and performance goals can be reasonably expected."

STATEMENT
OF
MR. MARTIN KLEPPER

ATTORNEY

LANE AND EDSON, P. C.

WASHINGTON, D. C.

SUBMITTED TO:

COMMITTEE ON FINANCE

SUBCOMMITTEE ON ENERGY AND AGRICULTURAL TAXATION

HEARING ON INDUSTRIAL AND COMMERCIAL TAX CREDITS

October 19, 1981

INTRODUCTION

Mr. Chairman, and members of the Subcommittee, my name is MARTIN KLEPPER.

I am an attorney with the Washington, D.C. law firm of Lane and Edson, P.C., and have been working for the last four years on various ways of financing investments in energy conservation. We have worked with public and private sector clients, including major national underwriters, leasing companies, companies that raise equity capital, and state and local governments. Recently we completed a study for HUD that identified methods of financing energy efficiency measures in small and medium sized industrial buildings in New York City.

I've also had a unique opportunity, by serving as chairman of the Energy Law Committee of the American Bar Association's Section of Real Property, Probate and Trust Law, to talk with attorneys throughout the country who are interested in energy conservation financing. However, my testimony is presented in my personal capacity and not as a representative of any client or group.

We are currently in a state of energy transition from the artificially low prices of the past decades which in effect served as incentives for investments in inefficient plant and equipment, to the current decade of high energy prices. To bridge this gap, property owners need incentives sufficient to overcome the non-economic barriers to energy investment. These incentives are also necessary to interest financial institutions in entering the business of providing third party financing for energy measures. To date, banks, insurance companies, leasing companies and underwriters have not actively developed financing programs for energy efficiency measures. Enactment of the energy conservation tax credits provided by S. 750 and S. 1288 will form the basis for more active involvement of financial institutions in helping industry become more energy efficient.

These financial institutions can provide the private sector capital needed to finance energy investments. Firms with energy savings potential can obtain the funds needed to install efficiency measures from third parties if adequate tax credits are available. To date there has been relatively little third party financing of energy efficiency measures. Third party financing -- by a bank, a leasing company, a manufacturer, etc. -- is particularly important to small and medium sized firms which cannot finance conservation investments out of internally generated funds.

To understand the need for additional tax credits, one must recognize that property owners do not act in accordance with model economic theory. Even if an investment is cost-effective, a host of other factors inhibit industrial conservation. These include:

1. Failure to apply rate of return analysis to measure energy investments. Energy costs usually constitute a very small portion of the total costs of manufacturing or creating a product, generally two to three percent of the value of the finished product. Therefore, the opportunity to reduce energy costs by ten

percent or more is often not as important in contributing to increased profitability as other investments, such as those that lead to increased sales.

2. Competition for investment capital. Competition for a firm's scarce dollars is widely recognized as the most important limitation on energy efficiency investment. An entity with limited funds will compare the expected return from one investment with the expected return from another. Aside from investments required by law, such as environmental and OSHA requirements, energy efficiency improvements often compete favorably with other projected expenditures of funds. However, they do not create added plant capacity which can have a multiplier effect on profits.

3. Separate responsibility. Separation of responsibility within a company for energy costs is another reason industrial energy conservation has been lagging. Energy bills are often paid by a corporate controller who does not have responsibility for managing the facility. In large firms one person has responsibility for energy costs and improving energy efficiency. Small and medium sized firms usually do not give energy similar attention.

I believe that the energy tax credits proposed in S. 750 and S. 1288 would help overcome these constraints and would provide an effective catalyst for industrial investment in energy efficiency improvements: These credits should be made equally available to small and medium sized firms so that they have an incentive to install energy efficiency measures. The Economic Recovery Tax Act of 1981 ("ERTA") does not, by itself, provide sufficient incentive for industrial and commercial energy efficiency investments. For example, the accelerated cost recovery system contained in ERTA requires a property owner who retrofits a commercial office building with a new boiler to depreciate that boiler over 15 years because it is a structural component of a building.

Tax credit incentives are necessary so that risk takers will undertake innovative conservation investments that will become accepted models for their industry. Without this added financial incentive, given high rates of interest, the return on capital invested in new energy efficiency technologies, relative to the risks, does not provide adequate incentive for many industrial and commercial efficiency investments. Even though energy conservation measures are not new, they are relatively new to most financial institutions which have no experience with the measures. Moreover, industry itself faces novel construction, financing and operating risks when it installs a new energy efficiency measure. Technologies developed in laboratories and in pilot demonstration projects may simply not translate to meet industrial and commercial demands. Operating costs could exceed original estimates because of higher than projected costs of construction, finance, environmental and regulatory requirements, and inflation. These risks may reduce a project's feasibility or increase the cost of energy efficiency to a level not competitive with other sources of energy or alternatives for capital investment. The proposed tax credits of S. 750 and S. 1288 increase the potential rate of return to a level which is expected to induce companies to overcome the risks and barriers now preventing investments in energy efficiency improvements.

The bottom line is that, without the economic incentive provided by S. 750 and S. 1288 businessmen in the industrial and commercial sectors simply will not finance many efficienty measures and energy will continue to be wasted. We should all remember that energy wasted today can not be recovered tomorrow.

I want to suggest for your consideration two specific changes to S. 750 and S. 1288 that I believe would significantly increase investment in energy efficiency improvements:

1. Provide a Safe Harbor For Energy Equipment Leases. The Economic Recovery Tax Act of 1981 has created a safe harbor from traditional leasing concepts for equipment leased by a corporation. These safe harbor rules permit corporations to transfer tax benefits related to owning equipment to other corporations who help finance the cost of the equipment. A similar safe harbor provision should be incorporated into S. 750 and S. 1288 to permit individual lessors to obtain the tax benefits related to owning and leasing energy equipment even if the lease would not otherwise qualify as a lease for tax purposes. This provision will permit third parties to finance the installation of energy equipment; it will significantly increase the ability of small and medium sized property owners to benefit from the new energy tax credits.

In the leasing area there are a number of restrictions on the use of leasing equipment that prevent a company that wants to lease energy conservation equipment for a building from obtaining the tax credits that would otherwise be available. There is a provision, for example, that if the lessor is an individual or group of individuals, the lease term cannot be more than one- half of the useful life of the equipment. It is very difficult for a company that is planning to acquire a coal-fired boiler with a fifteen year life to lease that boiler on an economic basis if the lease cannot exceed 7½ years. Under present law, if the lease exceeds 7½ years, the owner loses the applicable tax credit. Thus, even if a tax credit is available, because of the restrictions on leasing by noncorporate lessors, those tax credits cannot be used by partnerships or individuals to provide the capital that the property owner might need. The tax credit is meaningless to the building owner if he doesn't have the capital to buy the equipment. Therefore, I urge this Committee to allow noncorporate lessors of energy efficiency equipment to retain the tax credits without complying with other definitions of a "lease" for tax purposes.

2. Extend the Tax Credit To Multifamily Buildings. Based on our experience with a variety of clients who own and manage buildings, there is an urgent need for a tax credit that would induce eenrgy conservation in multifamily buildings. Currently, investment in energy efficiency improvements by multifamily property owners lags far behind conservation investments by both industrial and commercial property owners. The regular investment tax credit and most available energy tax credits are not available

for energy retrofit measures installed in multifamily buildings. The absence of tax incentives for multifamily building owners is a barrier that could be overcome by an amendment to S. 1288.

Thank you for the opportunity to offer these comments on S. 750 and S. 1288. Mr. Chairman, I applaud your commitment to energy tax incentives. I would be pleased to assist you and the Committee in preparing appropriate legislative language to accomplish the changes suggested above.

GeoProducts

October 19, 1981

Hon. Malcom Wallop, Chairman
Energy and Agricultural Taxation Subcommittee
Committee on Finance
United States Senate
Washington, D.C. 20510

Dear Senator Wallop:

Enclosed is written testimony prepared by GeoProducts Corporation for inclusion in the record of the hearing held by your Subcommittee on this date on S. 750 and similar energy tax measures.

To summarize the statement, we are concerned about recent reports that officials of the Treasury Department are contemplating repeal or modification of the investment tax credit for alternative energy equipment. Such a move would be short-sighted. The Energy Tax Act credits are working as intended. They are encouraging wide spread interest in the alternate energy projects of companies such as GeoProducts. The ground rules should not be changed at this time.

We also want to take this opportunity to point out an unreasonable situation arising from regulations implementing the Energy Tax Act. Under the IRS regulations, a company constructing an electrical power plant utilizing two alternative energy resources - geothermal and wood waste in our case - is unfairly penalized. Our statement details the specifics of the situation and recommends a solution for your consideration.

We appreciate this opportunity to present our views on the pending legislation. We look forward to working closely with you and your members as you consider possible amendments to the enrgy tax incentives enacted in 1978.

Sincerely,

Alexander Black

Alexander Black
Chairman of the Board

FHH:apr

GEOPRODUCTS CORPORATION, 1330 BROADWAY, OAKLAND, CALIFORNIA 94612 (415) 893-8365

STATEMENT
OF
GEOPRODUCTS CORPORATION
ON S. 750
October 19, 1981

Mr. Chairman and members of the Energy and Agricultural Taxation Subcommittee, GeoProducts Corporation welcomes this opportunity to present its views on S. 750, legislation amending and expanding the energy tax incentives enacted in the Energy Tax Act in 1978.

GeoProducts Corporation was formed in 1975 to develop and utilize such alternate energy resources as geothermal heat and wood residues. The company has headquarters in Oakland, California, and is actively pursuing the development of alternative energy projects at a number of locations in the West.

In 1979, GeoProducts acquired exclusive rights to a new process for converting organic plant materials to ethanol. This process was developed by the Forest Products Laboratory of the University of California and uses neither food grains nor fossil fuels, as do other ethanol processes. Instead, it uses wood residues and agricultural waste to produce fuel-grade ethanol.

Also in 1979, GeoProducts signed agreements with the U.S. Forest Service, the California Department of Water Resources, and the U.S. Department of Energy to share in the funding of project development work for a hybrid geothermal-wood residue power plant. The plant is to be sited in Lassen County, California, (about 19 miles east of Susanville) and will produce 55 megawatts of electricity when completed in 1985. Wood residues collected within a 100 mile radius of Susanville will provide the fuel for the facility. Low temperature geothermal fluid will be used to dry the wood and also to preheat the boiler feedwater and combustion air. The dried wood will be burned in a conventional combustion process to produce steam for the generation of electricity. GeoProducts will own and operate the plant; the California Department of Water Resources will purchase up to 100 percent of the electrical output; and up to 30 percent of the electricity will be available for local use.

GeoProducts is presenting this statement to your Subcommittee for three reasons. First, we are alarmed at recent reports that the Administration is seriously considering the elimination or reduction of the alternative energy and conservation tax incentives established in 1978 with passage of the Energy Tax Act and reaffirmed with enactment of the Crude Oil Windfall Profits Tax Act in 1980. Second, we wish to point out certain inequities in the regulations promulgated by the Internal Revenue Service to implement the provisions of the 1978 Act relating to the investment tax credit for businesses. Third, and finally, we have a specific amendment to S. 750 to offer for your consideration.

Continued Support for the Energy Tax Incentives

As members of this Subcommittee are aware, the Administration is vigorously exploring ways to increase revenue without tampering with the tax cuts enacted earlier this year. One of the possibilities under active consideration by the Treasury Department is elimination or modification of the conservation and alternative energy tax incentives established in 1978. Should the Department recommend such changes, and Congress accept them, the effect on alternative energy companies would be nothing short of devastating.

Attracting equity capital for conventional energy projects is often a reasonably easy propostion. Convincing investors to provide risk capital for alternative energy projects is, on the other hand, significantly more difficult. Recognition by Congress of this reality resulted in enactment of the energy tax credits for homeowners and businesses.

The energy credits are working as anticipated; they are encouraging large-scale and geographically wide-spread commercial energy development. Companies, like GeoProducts, have made long-range decisions based on the expectation that the current tax incentives will be available at least through 1985. To change the ground rules at this time would only slow down the on-going efforts of individual companies to increase and diversify our domestic supplies of energy.

Therefore, we respectfully urge the members of this Subcommittee to join Senators Chaffee and Matsunaga in their drive to put the Senate on record in support of retaining the existing tax incentives for investments in conservation and renewable energy projects. The "sense of the Senate" resolution they are preparing (and a companion measure now pending in the House of Representatives) will give a strong signal to the officials at the Department of the Treasury that any proposal to repeal the energy tax incentives would be opposed by Congress. We hope you will support the Chaffee-Matsunaga resolution.

Problems with the IRS Regulations of January 23

On January 23, 1981, the Internal Revenue Service promulgated final regulations to implement the provisions of the Energy Tax Act of 1978 providing investment tax credits for business energy property. These regulations contain certain inequities which we hope you will address when the Subcommittee takes up S. 750.

The principal problem for GeoProducts appears at 26 CFR 1.48-9(c)(10)(iv) which states that:

> "(iv) Equipment that uses energy derived from a geothermal deposit is eligible [for the 15% investment tax credit for geothermal property] only if it uses geothermal energy exclusively. Thus, geothermal equipment does not include equipment that uses energy derived both from a geothermal deposit and from sources other than a geothermal deposit..."

The obvious purpose of this limitation is to prevent systems which are primarily fueled by oil or gas, with only a minimal geothermal contribution, from qualifying for the geothermal credit. However, the IRS rule inadvertently, but nonetheless adversely, penalizes innovative hybrid projects like the one GeoProducts is contemplating in northern California.

Under the IRS regulations, those components of the hybrid plant which "produce, extract, or use" energy derived "exclusively" from a geothermal deposit (such as hot water distribution lines) are eligible for the credit for geothermal property. Similarly, those components of the plant which convert the wood waste to steam (such as the fire box and the boiler) will qualify for the credit for "alternative energy property", because the wood burned to heat the water is "an alternate substance". But, those parts of the plant which use energy from both geothermal and biomass sources (such as the turbine generator set) cannot qualify for either credit.

The limitation is especially unreasonable in light of explicit language in the Energy Tax Act which states the "geothermal equipment" includes, in the case of electricity generated by geothermal power, all of the components of the plant up to (but not including) the electrical transmission stage. The intent of Congress that all of the equipment of a geothermal power plant qualify for the credit is quite clear. Unfortunately, the IRS regulations are not so explicit.

Other examples serve to illustrate the unfortunate restrictions which this IRS rule has placed on mixing geothermal energy and energy from another energy source. Geothermal resources may not, in some instances, be hot enough to fully satisfy a particular industrial process heat requirement. However, by adding a few degrees to the heat supplied by the geothermal source, it is often possible to reduce significantly the amount of oil or gas used in a plant or facility. Furthermore, many industrial processes involve several separate steps requiring different temperatures. Some of these steps can use geothermal heat, while others may require further heating. Under the IRS regulations, if an industrial or commercial geothermal system contains even a minimal addition on non-geothermal heat, then the energy system is ineligible for the energy investment tax credit.

A Proposed Amendment to S. 750

In order to correct these inequities, GeoProducts has prepared an amendment to S. 750 which is attached to this statement. The amendment has two basic provisions.

In the case of a business energy system which uses both geothermal energy and energy from a source not eligible for the investment tax credits (such as oil or gas), a new eligibility formula is proposed: all of the equipment of the system shall be eligible for the credit for geothermal property if more than 80 percent of the energy is supplied from geothermal resources. If less than 80 percent comes from geothermal, the credit shall apply to only those portions of the system which produce, distribute, extract, transfer, or use energy which is more than 50 percent supplied by geothermal.

For a system which uses geothermal energy and another energy source which is eligible for the energy investment credit (such as biomass, wind, or solar), all of the equipment of the system shall be eligible for the tax credit for geothermal property if more than 80 percent of the energy comes from geothermal, or any of the other alternative energy sources eligible for the credit, or any combination thereof (referred to as "qualified sources"). If less than 80 percent of the energy is supplied by qualified sources, the credit shall apply to those portions of the system which produce, distribute, transfer, extract, or use energy which is more than 50 percent supplied by such qualified sources.

The purpose of the second section of the amendment is to deal with situations, like the GeoProducts hybrid plant, where a combination of alternative energy sources will be used to produce electrical power. Existing law already allows electric generating equipment driven by hydroelectric, wind, or geothermal energy to qualify for the energy tax credit. The logic behind enacting the credits for such situations was to encourage the construction of facilities to produce electric power from domestic alternative energy sources. Since geothermal and biomass are clearly "alternative energy sources", it is consistent with the original intent of Congress in adopting the Energy Tax Act to extend the business energy investment credits to steam-driven, turbine-generator sets utilizing water from any source, if the water is converted to steam by use of alternative energy sources, such as geothermal heat, biomass energy, or any combination thereof.

We appreciate your consideration of this amendment. We stand ready to answer any questions you might have or to assist the Subcommittee in any manner.

Thank you for this opportunity to present our views.

Proposed Amendment to S. 750

At a relevant place, insert the following new section:

"Paragraph (3) of section 48(l) is amended by adding at the end thereof the following new subparagraph:

"(H) APPLICATION OF CREDIT UNDER SECTION 46 TO EQUIPMENT WHICH USES ENERGY FROM A GEOTHERMAL DEPOSIT AND ANOTHER ENERGY SOURCE. --

(i) In the case of a system which uses both energy from a geothermal deposit (hereinafter referred to in this subparagraph as "geothermal energy") and an energy source not eligible for the credit under Section 46, all of the equipment comprising the system shall be eligible for the credit for Solar, Wind, or Geothermal Property under section 46(a)(2)(C) if, on a British Thermal Unit (BTU) basis, geothermal energy provides more than 80 percent of the energy in a typical year for which the system is designed. If less than 80 percent of the energy is supplied by geothermal energy, the credit shall apply to those portions of the system which produce, distribute, transfer, extract, or use energy which is more than 50 percent supplied by geothermal energy (on an annual BTU basis).

(ii) In the case of a system which uses both geothermal energy and another energy source eligible for the credit under section 46 (such as biomass, solar, wind, ocean thermal, or hydroelectric), all of the equipment comprising the system (up to, but not including the electrical transmission stage in the case of an electrical generation facility) shall be eligible for the credit for Solar, Wind, or Geothermal Property under section 46(a)(2)(c) if, on a BTU basis, more than 80 percent of the energy in a typical year for which the system is designed, is suplied by geothermal energy, or any of the other forms of energy eligible for the credit under section 46, or any combination thereof (hereinafter referred to in this subparagraph as "qualified sources"). If less than 80 percent of the energy is supplied by qualified sources, the credit shall apply to those portions of the system which produce, distribute, transfer, extract, or use energy which is more than 50 percent supplied by such qualified sources (on an annual BTU basis).""

WHERE ENERGY CONSERVATION BEGINS

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October 26, 1981

Mr. Robert Lighthizer, Chief Counsel
Senate Finance Committee
2227 Dirkson Senate Office Bldg.
Washington D.C. 20501

Dear Mr. Lighthizer:

The National Insulation Contractors Association supports the passage of the Energy Security Tax Incentive Act of 1981 (S750).

NICA is a national, Washington based, trade association representing over 400 industrial and Commercial insulation contractors which employ over 30,000 people and generate a combined business volume of $2.9 billion annualy.

We beleive that the need for industrial energy conservation and efficiency now is vital to the future of the country.

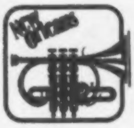
S 750 provides excellent incentives to industry for investment in energy conservation systems and equipment which require large capital expenditures by business.

NICA supports the President's economic program, but feels that incentives, such as those included in S 750, are needed in the short run to meet the administrations goal of a strong, self sufficient U.S. industrial base.

Sincerely,

Curtis T. Mackey
Executive Vice President

cc: Office of Senator Wallop: Attn: Lindsey Hooper



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